

From bob145 at suddenlink.net Tue Apr 1 12:03:55 2014
From: bob145 at suddenlink.net (Bob Jackson)
Date: Tue, 1 Apr 2014 11:03:55 -0500
Subject: [BoatAnchors] Refurb S-38C Gone Crazy
Message-ID: <E672D99112B44EE682E9B913D0535C19@etmce6cc47f15f>

This radio won't go silent, not even close! When turned on and warmed up, a low but fully "listenable" level of clean audio is present. With only slight advance of the volume control, audio level skyrockets. The set is fully re-capped; all caps and resistors test OK. Volume pot is good.

Circuit has been traced multiple times for voltage values. All are within bounds of schematic values. Swapping out the 12SG7 for a 12SK7 is of little help. 12SQ7 has been swapped as well - no effect. Has anyone else had this problem? Any suggestions would be very welcome.

73 to all,

Bob AG5X

From bob145 at suddenlink.net Tue Apr 1 16:12:28 2014
From: bob145 at suddenlink.net (Bob Jackson)
Date: Tue, 1 Apr 2014 15:12:28 -0500
Subject: [BoatAnchors] Refurb S-38C Gone Crazy
References: <E672D99112B44EE682E9B913D0535C19@etmce6cc47f15f>
<533AFAB1.30107@earthlink.net>
Message-ID: <051F0217016049CE9AE01699DC045339@etmce6cc47f15f>

Thanks, all.

First, parts and schematic don't match - different "runs" as someone suggested. Secondly, vol.pot doesn't look original and tests (using vtm) look like linear taper.

Thirdly, vol.pot is only 500K. Non-matching schematic calls for 2Meg.

Ordered some audio 2M audio pots and will go from there while re-heating all solder joints in that part of circuit.

Thanks to all for the help!

73,

Bob AG5X

----- Original Message -----

From: Scott Robinson

To: Bob Jackson ; porch ; qth

Sent: Tuesday, April 01, 2014 12:43 PM

Subject: Re: [BoatAnchors] Refurb S-38C Gone Crazy

H Bob,

Check the resistance of the volume control wiper to ground at its lowest setting. Also verify all grounds (solder bon dthe rivets to the chassis) hear the 12SQ7.

/scott

On 4/1/14 9:03 AM, Bob Jackson wrote:

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>

From charlesmorris800 at centurytel.net Tue Apr 1 17:29:14 2014
From: charlesmorris800 at centurytel.net (Charles)
Date: Tue, 01 Apr 2014 16:29:14 -0500
Subject: [BoatAnchors] TS-382/AP audio oscillator?
Message-ID: <ulbmj9hscuj8h5osriq9d9g3jv6ma6aai8@4ax.com>

A local flea market has a clean looking TS-382/A oscillator (frequency decades 20 Hz-200 KHz), complete except for the outer cabinet. Don't know if it has any output, if the tubes are good etc. They want \$20 firm.

Although I already have a similar but far more compact GR oscillator, not to mention an HP 204C, I hate to see it gathering dust or worse yet, scrapped. Should I buy it and find a space somewhere in my shack... (Is it known for stability, accuracy, low noise)?

thanks
Charles
WB3JOK/0

From WA5CAB at cs.com Tue Apr 1 19:52:21 2014
From: WA5CAB at cs.com (WA5CAB at cs.com)
Date: Tue, 1 Apr 2014 19:52:21 -0400 (EDT)
Subject: [BoatAnchors] TS-382A/U audio oscillator?
Message-ID: <8f686.258d4aa5.406cab35@cs.com>

Charles,

It's actually TS-382A/U. I've never had an A, but have a B and two C's. One of the C's has been in service here since about 1980. Had to stop and partially recap it about five years ago. It's a decent signal generator. I don't know that it's known for anything in particular. The TS-382F was replaced in the US military by the solid state AN/URM-127 (SG-377/URM-127), which I also have (actually an SG-377A). Much lighter but takes up the same shelf space and didn't look happy alongside my other tube type military test equipment so I went back to the 382C.

The TS-382A dates from 1952. They must have been made in some quantity because the D manual is dated 1953. Probably several different contractors were making them.

With its direct reading output meter it's quite useful but I wouldn't classify it as a valuable collectible.

Robert Downs - Houston
wa5cab dot com (Web Store)
MVPA 9480

In a message dated 04/01/2014 16:37:42 PM Central Daylight Time, charlesmorris800 at centurytel.net writes:

> A local flea market has a clean looking TS-382/A oscillator (frequency
> decades 20 Hz-200 KHz), complete except for the outer cabinet. Don't
> know if it has any output, if the tubes are good etc. They want \$20
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> yet, scrapped. Should I buy it and find a space somewhere in my
> shack... (Is it known for stability, accuracy, low noise)?
>
> thanks
> Charles
> WB3JOK/0

From ACOMAROW at usnews.com Tue Apr 1 20:35:30 2014

From: ACOMAROW at usnews.com (Comarow, Avery)

Date: Tue, 1 Apr 2014 20:35:30 -0400

Subject: [BoatAnchors] TS-382A/U audio oscillator?

In-Reply-To: <8f686.258d4aa5.406cab35@cs.com>

References: <8f686.258d4aa5.406cab35@cs.com>

Message-ID: <C16680FF35D3A24DB37E4B313ADC41F41439330576@USNEX2007.usn.root.ent>

IIRC, it does have a reed meter for verifying line frequency. Got to be worth \$20 for the cool factor.

Avery W3AVE

From: BoatAnchors [boatanchors-bounces at theporch.com] On Behalf Of WA5CAB at cs.com [WA5CAB at cs.com]

Sent: Tuesday, April 01, 2014 7:52 PM

To: charlesmorris800 at centurytel.net; boatanchors at theporch.com

Subject: Re: [BoatAnchors] TS-382A/U audio oscillator?

Charles,

It's actually TS-382A/U. I've never had an A, but have a B and two C's. One of the C's has been in service here since about 1980. Had to stop and partially recap it about five years ago. It's a decent signal generator. I don't know that it's known for anything in particular. The TS-382F was replaced in the US military by the solid state AN/URM-127 (SG-377/URM-127), which I also have (actually an SG-377A). Much lighter but takes up the same shelf space and didn't look happy alongside my other tube type military test equipment so I went back to the 382C.

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> not to mention an HP 204C, I hate to see it gathering dust or worse
> yet, scrapped. Should I buy it and find a space somewhere in my
> shack... (Is it known for stability, accuracy, low noise)?

>

> thanks

> Charles

> WB3JOK/0

BoatAnchors mailing list
BoatAnchors at theporch.com
<https://minime.theporch.com/mailman/listinfo/boatanchors>

From gumbear at pacbell.net Tue Apr 1 20:01:16 2014
From: gumbear at pacbell.net (Arden Allen)
Date: Tue, 1 Apr 2014 17:01:16 -0700
Subject: [BoatAnchors] TS-382/AP audio oscillator?
In-Reply-To: <ulbmj9hscuj8h5osriq9d9g3jv6ma6aai8@4ax.com>
References: <ulbmj9hscuj8h5osriq9d9g3jv6ma6aai8@4ax.com>
Message-ID: <06A32532361D42A492A483846A866A63@KB6NAX>

> ...Should I buy it and find a space somewhere in my
shack... (Is it known for stability, accuracy, low noise)?

If you had the cabinet you could use it for a foot stool. It's a prime example of why we call this stuff boat anchors. Built like a tank but not great for fussy audio work, distortion too high. It's certainly good enough for testing ham transmitters.

Arden Allen
KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)

From WA5CAB at cs.com Tue Apr 1 22:28:06 2014
From: WA5CAB at cs.com (WA5CAB at cs.com)
Date: Tue, 1 Apr 2014 22:28:06 -0400 (EDT)
Subject: [BoatAnchors] TS-382A/U audio oscillator?
Message-ID: <940f6.3b56c213.406ccfb5@cs.com>

Yes, it's a dual-reed meter. 60 and 400 CPS.

In a message dated 04/01/2014 19:41:12 PM Central Daylight Time,
ACOMAROW at usnews.com writes:

> IIRC, it does have a reed meter for verifying line frequency. Got to be
> worth \$20 for the cool factor.
>
> Avery W3AVE

Robert Downs - Houston

wa5cab dot com (Web Store)
MVPA 9480

From k1lky68 at gmail.com Tue Apr 1 22:37:16 2014
From: k1lky68 at gmail.com (Roy Morgan)
Date: Tue, 1 Apr 2014 22:37:16 -0400
Subject: [BoatAnchors] TS-382A/U audio oscillator?
In-Reply-To: <C16680FF35D3A24DB37E4B313ADC41F41439330576@USNEX2007.usn.root.ent>
References: <8f686.258d4aa5.406cab35@cs.com>
<C16680FF35D3A24DB37E4B313ADC41F41439330576@USNEX2007.usn.root.ent>
Message-ID: <83AB55C9-7F5D-4C1E-B8FC-CE1DA276971F@gmail.com>

On Apr 1, 2014, at 8:35 PM, Comarow, Avery <ACOMAROW at usnews.com> wrote:

>
> IIRC, it does have a reed meter for verifying line frequency. Got to be worth
\$20 for the cool factor.

Yes, indeed. The meter has two reeds and indicates 60 and 400 cycles.

The thing uses octal tubes and if you have the case, will keep your cat comfy and warm

Roy

Roy Morgan
RoyMorgan at alum.mit.edu
K1LKY Since 1958

From arc5 at ix.netcom.com Wed Apr 2 10:12:04 2014
From: arc5 at ix.netcom.com (David Stinson)
Date: Wed, 2 Apr 2014 09:12:04 -0500
Subject: [BoatAnchors] C.A.A. Gonset Communicator
Message-ID: <B5AA4EB566B04602BA4E23202E5D9832@DaddyPC>

Please take a look at this now-closed item, a
C.A.A. Gonset Communicator:

<http://cgi.ebay.com/ws/151263165377>

I got it at an estate and was just going to
"pass it along," but the pretty thing kept calling-out
"Fix me! FIX ME! You *know* you want to!"
So I gave in and closed the listing.

Who has a manual with diagrams?
Does anyone make a replacement for the missing
"Gonset" logo on the front?
Any "hints and kinks?"

73 DE Dave AB5S

From spr at earthlink.net Tue Apr 1 13:43:13 2014
From: spr at earthlink.net (Scott Robinson)
Date: Tue, 01 Apr 2014 10:43:13 -0700
Subject: [BoatAnchors] Refurb S-38C Gone Crazy
In-Reply-To: <E672D99112B44EE682E9B913D0535C19@etmce6cc47f15f>
References: <E672D99112B44EE682E9B913D0535C19@etmce6cc47f15f>
Message-ID: <533AFAB1.30107@earthlink.net>

H Bob,

Check the resistance of the volume control wiper to ground at its lowest setting. Also verify all grounds (solder bon dthe rivets to the chassis) hear the 12SQ7.

/scott

On 4/1/14 9:03 AM, Bob Jackson wrote:

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>

From spr at earthlink.net Tue Apr 1 13:53:55 2014
From: spr at earthlink.net (Scott Robinson)
Date: Tue, 01 Apr 2014 10:53:55 -0700
Subject: [BoatAnchors] Thoughts on Filtering Capacitors
In-Reply-To: <1FE80358B1F2436EAC5DB04D19F1AC3A@VALUED20606295>
References: <5336E040.5090802@kd5byb.net>
<1E06516081E9430EBEF08E37A7963823@VALUED20606295>
<875D733F2F4243958E1DD1BAB3C4B3B8@KB6NAX>
<1FE80358B1F2436EAC5DB04D19F1AC3A@VALUED20606295>
Message-ID: <533AFD33.4010608@earthlink.net>

Folks,

When discussion ceramic capacitors, always remember the distinction between NPO/COG dielectric parts and all the others.

NPO/COG caps are very low loss, very small tempco parts for use where you want a real capacitor with good stability, low losses, and a very small capacitance variation with voltage, such as in tuned circuits or audio filters.

The other ceramic dielectrics are all optimized for lotsa Farads in a small space. X7R and Z5U are common, and there are weirder ones that get you 33 microfarads at 6 volts in a cube about 0.1" on a side, but *only* at a particular voltage and temperature. For bypassing, these work fine.

Small parts permitting low area wiring loops--think of the path from the bypassed tube pin to ground, clearly a smaller loop with a modern, shorter part--improve bypassing performance. Losses don't matter in this application except for leakage currents.

To find out about Mylar caps, look at manufacturer's sites (WIMA, for example) and see what they say. Some mylars are wound and some are stacked like a ceramic cap. WIMA does not talk much about the series inductance of their parts, unfortunately.

Regards,

Scott

On 3/29/14 4:27 PM, Richard Knoppow wrote:

>
> ----- Original Message ----- From: "Arden Allen" <gumbear at pacbell.net>
> To: "Richard Knoppow" <1oldlens1 at ix.netcom.com>

>> Rich, nobody who makes capacitors wants to be known for making caps
>> with high series inductance. The inductance inherent in wound
>> film/foil construction is minimized by overlapping the foils at the
>> ends and crushing them together as part of the lead attachment
>> mechanism. Also metal spray is used to do the same thing.

>>

>> Arden Allen

>> KB6NAX

>

> The question has to do with both self inductance and dielectric
> loss. From what I can find some types of film caps have very low
> dielectric loss, right in there with mica and ceramics. The question is

> whether they are as suitable as RF coupling and by-pass caps. Usually,
> RF coupling caps are quite low in value so there is no problem using
> mica. The question I have is whether film caps are equal to ceramics in
> by-pass use. Modern film caps such as polypropylene, may actually have
> lower loss at low frequencies, at least compared to Class-2 ceramics. I
> just can't find anything definite and the advice I've seen is mostly
> anecdotal (I used ---- and they were better than ###). I am also not
> quite sure how to measure self inductance. All this was left out of my
> electronics cleasses a million years ago.

>

>

> --

> Richard Knoppow

From knjhanlon at msn.com Wed Apr 2 17:38:09 2014
From: knjhanlon at msn.com (JAMES HANLON)
Date: Wed, 2 Apr 2014 15:38:09 -0600
Subject: [BoatAnchors] C.A.A. Gonset Communicator
Message-ID: <BLU184-W44F88F4E6B387184CFAB4A06D0@phx.gbl>

Dave,

The bama website has a manual for the Gonset Communicator IIB and a schematic for the Communicator II. To find them do a Google search on "bama manual."

Jim, W8KGI

From pbrickey at verizon.net Thu Apr 3 10:38:56 2014
From: pbrickey at verizon.net (pbrickey at verizon.net)
Date: Thu, 03 Apr 2014 09:38:56 -0500 (CDT)
Subject: [BoatAnchors] Removiong Tarnish from Switches
Message-ID: <26988607.1349542.1396535936367.JavaMail.root@vznit170064>

Hi,

I seem to remember that a month or two ago there was a discussion on removing the tarnish from switches. I did save the info, but my hard drive crashed last week and I had no backup (lesson leaned). If I remember correctly, Arden had tried several methods and did recommend one.

73's,

Peter K6DGH

From gumbear at pacbell.net Thu Apr 3 17:27:42 2014

From: gumbear at pacbell.net (Arden Allen)
Date: Thu, 3 Apr 2014 14:27:42 -0700
Subject: [BoatAnchors] Removiong Tarnish from Switches
In-Reply-To: <26988607.1349542.1396535936367.JavaMail.root@vznit170064>
References: <26988607.1349542.1396535936367.JavaMail.root@vznit170064>
Message-ID: <5595BBAC118B409BBF2AD5067793E264@KB6NAX>

Hi Peter,

Other events took precedence when I was working on the Tektronix 503 and my follow-up report got lost in the messtop. Here's my conclusions:

We are talking about the tarnish on the silver plated contacts of rotary wafer switches. Tarnish is easily identified as a dark black coating over the light colored silver metal. Silver tarnish is the result of atmospheric hydrogen sulfide interacting with the silver to produce silver sulfide. Silver sulfide is resistively conductive but interferes with circuit functions that require low resistance contact closure.

Be advised that as switch rotation causes wearing away of the tarnish the switch wafer can become contaminated with particles of the tarnish that can lead to the development of shorts between contacts where a considerable DC voltage gradient exists. Visual inspection of switch wafers should be taken to discover the existence of surface tracking between contacts. Evidence of tracking must be tested by using a hard metal or non metal scraping tool so as to avoid depositing metal on the insulation surface while cleaning away tracking deposits, especially with regard to ceramic switch wafers.

I entertained the idea of using a chemical process to remove the tarnish but did not find something I felt I could trust to do the job without adding new problems to the situation. Tarn-X was suggested by some for removing tarnish from silver plated connectors. Connectors are relatively simple in construction which allows for thorough removal of the Tarn-x immediately after treatment has removed the tarnish as the manufacturer recommends. Proper cleanup of rotary switches is complicated by the porosity of the insulations and complexity of the mechanisms.

The method I believe to be harmless but effective is to use a combination of mechanical removal and contact cleaner flushing of the switch wafers. As some contact cleaners contain a FLAMMABLE solvent it is important that equipment be NOT ENERGIZED because an arc can occur between contacts causing miniscule burning of the solvent which causes coating of the surrounding insulation with carbon soot which is conductive. Caig DeoIT (R) as one of the most effective contact cleaners for tarnish removal contains a necessary lubricant to prevent galling of the silver plating and underlying base brass.

To remove tarnish from the switch contacting surfaces lubricate the switch

shaft/bushing with a light oil and apply a light duty grease to the switch detents. Liberally apply the contact cleaner to the switch wafer(s) and rotate the switch through its range repeatedly. The contact cleaner rapidly dries and must be reapplied to facilitate continuing mechanical removal of the Tarnish. DO NOT under any circumstances use a non lubricating contact cleaner in spite of the misinformed advice the internet is riddled with.

You will not see visual evidence of contacting restoration without the aid of microscopic magnification because the tarnish becomes intermixed with the contacting surfaces preventing the appearance of bright metallic silver. Following up with ohmmeter testing will establish the degree of contacting restoration that has been achieved. ALLOW SUFFICIENT TIME FOR THE FLAMMABLE CONTACT CLEANER SOLVENT TO EVAPORATE BEFORE APPLYING POWER TO THE EQUIPMENT!

In my case with the Tektronix 503 switch functioning became normal and reliable after several switch rotating sessions over the day and part of the next. This procedure I recommend as the most conservative means of accomplishing the task without risking damage to the irreplaceable switches in our antique radio gear and test equipment.

Arden Allen
KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)

> I seem to remember that a month or two ago there was a discussion on
> removing the tarnish
from switches. I did save the info, but my hard drive crashed last week and I had no backup
(lesson learned). If I remember correctly, Arden had tried several methods and did recommend
one.
73's,
Peter K6DGH

From 4cx250b at miamioh.edu Thu Apr 3 12:24:57 2014
From: 4cx250b at miamioh.edu (Jim Garland)
Date: Thu, 3 Apr 2014 10:24:57 -0600
Subject: [BoatAnchors] Odd Viking KW problem
Message-ID: <002101cf4f59\$416dc3f0\$c4494bd0\$miamioh.edu>

Hi Gang, I'm at my wit's end trying to figure out an odd problem with my Viking KW. When I tune the amp into a dummy load at 7285, all seems normal, with the expected output. If I substitute my SteppIR antenna (which has a 50:ohm resistive impedance, 1:1 VSWR) for the dummy load, the output drops

to about 150W, and the LP100A meter in the coax line shows a 7:1 VSWR.

An MFJ259B shows a 1:1 VSWR on my SteppIR at 7285, when placed at the Viking end of the coax. My first thought was that the cable had a bad connection that only occurred at high power levels. However, if I back the Viking KW down to a couple of watts (by reducing the drive power), the 7:1 VSWR problem is still there. If I connect the Ranger exciter directly into the coax line (about 50W), the SWR is 1:1 and all behaves normally.

So I'm left with the conclusion that the Viking KW is somehow transmitting on the wrong frequency when the antenna is connected, but on the correct frequency when a dummy load is connected, even though both the antenna and dummy load show identical 50 impedance, with no reactive component. The Viking does not appear to show any instability or parasitic, and I'm guessing it's transmitting on the second harmonic of 7285. I've not hooked up a frequency counter yet to verify that possibility, but plan to do that today. Out of curiosity I also loaded the Viking KW up on 75m, using an inverted V antenna and it operates normally. I plan to swap a Ranger II for the Ranger exciter to see if the Ranger has some problem that's making the Viking act squirrely. This is a very odd situation and at this point I'm completely puzzled. Wonder if anybody else has had a similar experience. I hate having to work on the Viking KW, since it's a bear to slide out of the cabinet.

73,

Jim W8ZR

From k1lky68 at gmail.com Thu Apr 3 20:13:51 2014
From: k1lky68 at gmail.com (Roy Morgan)
Date: Thu, 3 Apr 2014 20:13:51 -0400
Subject: [BoatAnchors] Odd Viking KW problem
In-Reply-To: <002101cf4f59\$416dc3f0\$c4494bd0\$miamioh.edu>
References: <002101cf4f59\$416dc3f0\$c4494bd0\$miamioh.edu>
Message-ID: <451184E9-7D9A-4FA4-935D-2B8E1E9BA562@gmail.com>

On Apr 3, 2014, at 12:24 PM, Jim Garland <4cx250b at miamioh.edu> wrote:

> When I tune the amp into a dummy load at 7285, all seems normal,
> with the expected output. If I substitute my SteppIR antenna (which has a

> 50:ohm resistive impedance, 1:1 VSWR) for the dummy load, the output drops
> to about 150W, and the LP100A meter in the coax line shows a 7:1 VSWR.

I think you are thinking right:

- the dummy load is 50 ohms at whatever frequency the amp is putting out.
- the antenna is not 50 ohms at the frequency the amp is putting out.
- The SWR meter will report more or less happily about whatever frequency is running through it.

> An MFJ259B shows a 1:1 VSWR on my SteppIR at 7285, when placed at the Viking
> end of the coax.

Presumably the MFJ thing is measuring at some frequency the Steppir is ?
expecting?. Can you find a frequency at which it reports the troublesome 7 to 1?

> So I'm left with the conclusion that the Viking KW is somehow transmitting
> on the wrong frequency when the antenna is connected,

I think so, too.

> but on the correct
> frequency when a dummy load is connected,

Or on whatever frequency it is putting out, NOT necessarily the right one for the
Steppir.

> ...I also loaded the VIKing KW up on 75m, using an
> inverted V antenna and it operates normally.

I suspect a band switch problem making the thing put out a wrong frequency. I'm
not familiar at all with the Viking Kilowatt: does it have a driver stage that is
switched for the desired band? Input networks at the input to the amp?

> I plan to swap a Ranger II for
> the Ranger exciter to see if the Ranger has some problem that's making the
> VIKing act squarely.

Good idea.

If it continues to puzzle you:

- get a receiver hooked up with a SMALL antenna some how coupled to the Kilowatt
and see what the signal levels on different bands are to the dummy load. A little
wire near the output connector might tell you what you need to know. Maybe just
nearby. Or an inch poked carefully into the kilowatt cabinet, far from the
dangerous parts.

- If you have a good scope do the same with that and have your calculator handy or

note pad to figure some 5- or 10-cycle period lengths (1mc is 1 uSec per cycle.)

> hate having to work on the VIKing KW, since it's a bear to slide out of the
> cabinet.

Get help. Leenyars can be heavy!

heheh

I'll go look up the Viking Kilowatt and fill in my unfamiliarity with it.

Roy

Roy Morgan
RoyMorgan at alum.mit.edu
K1LKY Since 1958

From gumbear at pacbell.net Fri Apr 4 00:25:57 2014
From: gumbear at pacbell.net (Arden Allen)
Date: Thu, 3 Apr 2014 21:25:57 -0700
Subject: [BoatAnchors] Odd Viking KW problem
In-Reply-To: <002101cf4f59\$416dc3f0\$c4494bd0\$miamioh.edu>
References: <002101cf4f59\$416dc3f0\$c4494bd0\$miamioh.edu>
Message-ID: <098A6A8389434F4CB30012BA9450727A@KB6NAX>

> Hi Gang, I'm at my wit's end

Just a couple of thoughts to add to Roy's comments: Is the transmitter out of its cabinet (which is presumably an RF tight enclosure) when you are operating with the antenna? If you get enough RF from the antenna feeding back into the transmitter you may have an oscillator going at whatever frequency the antenna helps to decide.

Any antenna has but one frequency (and at harmonics) at which it presents a resistive load and it's hardly ever the resistance the antenna is claimed to present. So what you get when an SWR bridge indicates a 1:1 match is a load of the correct resistance (depending on the bridge, 50 ohms in your case) at the output coax connector of the bridge, which presumably is connected between the transmitter and match box. What the match box does is cope with the reactance situation presented to its output terminals. If you have a wire feeder or transmission line sporting standing waves you can get lots of RF in the shack.

A spectrum analyzer with a one inch long antenna would tell the story.

Arden Allen
KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)

From 1oldlens1 at ix.netcom.com Fri Apr 4 00:43:48 2014
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Thu, 3 Apr 2014 21:43:48 -0700
Subject: [BoatAnchors] Odd Viking KW problem
References: <002101cf4f59\$416dc3f0\$c4494bd0\$miamioh.edu>
Message-ID: <80BEE7AF7F9A40A0A219190EDA97401B@VALUED20606295>

----- Original Message -----

From: "Jim Garland" <4cx250b at miamioh.edu>
To: <boatanchors at theporch.com>
Sent: Thursday, April 03, 2014 9:24 AM
Subject: [BoatAnchors] Odd Viking KW problem

> Hi Gang, I'm at my wit's end trying to figure out an odd
> problem with my
> Viking KW. When I tune the amp into a dummy load at 7285,
> all seems normal,
> with the expected output. If I substitute my SteppIR
> antenna (which has a
> 50:ohm resistive impedance, 1:1 VSWR) for the dummy load,
> the output drops
> to about 150W, and the LP100A meter in the coax line shows
> a 7:1 VSWR.
>
>
>
> An MFJ259B shows a 1:1 VSWR on my SteppIR at 7285, when
> placed at the Viking
> end of the coax. My first thought was that the cable had a
> bad connection
> that only occurred at high power levels. However, if I
> back the Viking KW
> down to a couple of watts (by reducing the drive power),
> the 7:1 VSWR
> problem is still there. If I connect the Ranger exciter
> directly into the

> coax line (about 50W), the SWR is 1:1 and all behaves
> normally.
>

Does the MFJ also show only 150 watts out? Does the MFJ VSWR change with the power level? The above sounds like it.

I agree that finding out what is coming out of the KW could be helpful. If you have access to a good grid dip oscillator most can be used as wavemeters also and make it easy to see whats coming out. A spectrum analyser would be great but I don't happen to have one and suspect you don't either.

I also have to look up the SteppIR antenna to see what it is. If its like most wide band ham antennas its a trap arrangement of some sort, there may be a clue there.

--

Richard Knoppow
Los Angeles
WB6KBL
dickburk at ix.netcom.com

From 4cx250b at miamioh.edu Fri Apr 4 01:35:35 2014
From: 4cx250b at miamioh.edu (MU 4CX250B)
Date: Thu, 3 Apr 2014 23:35:35 -0600
Subject: [BoatAnchors] Odd Viking KW problem
In-Reply-To: <098A6A8389434F4CB30012BA9450727A@KB6NAX>
References: <002101cf4f59\$416dc3f0\$c4494bd0\$miamioh.edu>
<098A6A8389434F4CB30012BA9450727A@KB6NAX>
Message-ID: <7481291577035960816@unknownmsgid>

Thanks Arden, Rodger, Roy, and others, especially for the suggestion of using a spectrum analyzer to see what's really going on. I'll hook my SA up tomorrow. To respond to a couple of other comments: the Viking KW is buttoned up tight in its enclosure and well grounded. There is a 30 ft run of LMR-400 from the Viking to a grounded bulkhead on the wall, and from there through a 270 ft length of Heliax to the top of my 75ft Sky Needle tower. I'm not using a tuner, but the SteppIR tunes the dipole element to resonance. I see the 7:1 VSWR on both the high power and low power settings of the Viking, even though the tune and load settings are different. I've used the Viking on 7 MHz in the past and it worked normally, so something has clearly changed. I tried Rodgers suggestion of rocking the controls and switches, but to no effect. I'm guessing the SA will show output on the second harmonic of 7290, but I'll know for sure tomorrow. I'll let you all know. Tnx

again for the helpful comments.

73,

Jim W8ZR

Sent from my iPad

On Apr 3, 2014, at 10:26 PM, Arden Allen <gumbear at pacbell.net> wrote:

>> Hi Gang, I'm at my wit's end

>

> Just a couple of thoughts to add to Roy's comments: Is the transmitter out of its cabinet (which is presumably an RF tight enclosure) when you are operating with the antenna? If you get enough RF from the antenna feeding back into the transmitter you may have an oscillator going at whatever frequency the antenna helps to decide.

>

> Any antenna has but one frequency (and at harmonics) at which it presents a resistive load and it's hardly ever the resistance the antenna is claimed to present. So what you get when an SWR bridge indicates a 1:1 match is a load of the correct resistance (depending on the bridge, 50 ohms in your case) at the output coax connector of the bridge, which presumably is connected between the transmitter and match box. What the match box does is cope with the reactance situation presented to its output terminals. If you have a wire feeder or transmission line sporting standing waves you can get lots of RF in the shack.

>

> A spectrum analyzer with a one inch long antenna would tell the story.

>

>

> Arden Allen

> KB6NAX

>

> Adopt a shelter or rescue dog

> and make a friend for life =:-)

From w7qho at aol.com Fri Apr 4 22:11:47 2014

From: w7qho at aol.com (mac)

Date: Fri, 4 Apr 2014 19:11:47 -0700

Subject: [BoatAnchors] Odd Viking KW problem

In-Reply-To: <7481291577035960816@unknownmsgid>

References: <002101cf4f59\$416dc3f0\$c4494bd0\$miamioh.edu>

<098A6A8389434F4CB30012BA9450727A@KB6NAX> <7481291577035960816@unknownmsgid>

Message-ID: <7E17FC69-844D-47C3-8281-BA358B770744@aol.com>

Try hooking up an entirely different transmitter and see what happens. Same results, look into the antenna setup. No SWR shift, check further into Viking KW.

Dennis D. W7QH0
Glendale, CA

>

>>> Hi Gang, I'm at my wit's end

From charlesmorris800 at centurytel.net Sat Apr 5 21:46:48 2014
From: charlesmorris800 at centurytel.net (Charles)
Date: Sat, 05 Apr 2014 20:46:48 -0500
Subject: [BoatAnchors] Meter needle repair?
Message-ID: <bob1k9dmjt3k229on45rukompjafq6aoc9m@4ax.com>

I have acquired an old Ford Motor Co. "RRRE Model T-3"
battery/alternator load tester, otherwise working fine, but the meter
needle is broken off.

Some idiot had attempted to "repair" it by sliding the business end of
a ball-point pen over the stump of the needle, which was not only much
too short but WAY too heavy (thus making the meter unusably
position-sensitive, as a recent discussion of d'Arsonval movements
here has made clear).

I can attempt to rig something myself if I can find a similar needle
from an otherwise trashed movement, a very fine straight piece of
wire, broom straw, or anything light enough that can be superglued in
place. Frankly I don't think my hands are steady enough. Is there
anyone who does these kind of meter repairs?

thanks
Charles

ps the presumed carbon pile (fixed) load is a tin can that looks
exactly like a food can except for the insulated heavy stud terminals
on one end. Never seen anything like it, and I think most testers now
use nichrome elements...

From k1lky68 at gmail.com Sat Apr 5 23:39:30 2014
From: k1lky68 at gmail.com (Roy Morgan)
Date: Sat, 5 Apr 2014 23:39:30 -0400
Subject: [BoatAnchors] Meter needle repair?
In-Reply-To: <bob1k9dmjt3k229on45rukompjafq6aoc9m@4ax.com>
References: <bob1k9dmjt3k229on45rukompjafq6aoc9m@4ax.com>
Message-ID: <F6CA037D-F5AC-4C69-A7C5-C8276CE8CF7F@gmail.com>

On Apr 5, 2014, at 9:46 PM, Charles <charlesmorris800 at centurytel.net> wrote:

> ... the meter needle is broken off.
>
> Some idiot had attempted to "repair" it
> ... Is there
> anyone who does these kind of meter repairs?

Eldad

From: "Eldad" <Eldad at HVC.RR.com>
To: <rjmattson at hvi.net>, "Collins Reflector" <collins at listserve.com>
Subject: {Collins} Re: Reasonable Meter Repair
Date: Tue, 24 Sep 2002 20:10:26 -0400

I did quite a lot of meter repairs over the years, and have a well equipped shop to do it, if anyone is interested.
Am in upstate NY, and UPS gets here.
Eldad.
K2AB.

Or:

Larson Metercraft rebuilt a vintage Simpson meter for me. They repair the oldies. Cost reasonable.

http://larsonmetercraft.com/contact_information.htm
Larson Metercraft
9328-A Wheatlands Rd.
Santee, CA 92071

Ph (619) 258-8990
Fx (619) 258-5610

<http://larsonmetercraft.com>

Talk to Bob Larson about your meter needs.

bob at larsonmetercraft.com

If you can?t connect with these folks, I have a whole notes file with many other reports of meter repair places.

Roy

Roy Morgan
RoyMorgan at alum.mit.edu
K1LK Y Since 1958

From 1oldlens1 at ix.netcom.com Sat Apr 5 23:16:19 2014
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Sat, 5 Apr 2014 20:16:19 -0700
Subject: [BoatAnchors] Meter needle repair?
References: <bob1k9dmjt3k229on45rukompjafq6aoc9m@4ax.com>
Message-ID: <1E6AC922A5F9499C8F6126DE73368A92@VALUED20606295>

----- Original Message -----

From: "Charles" <charlesmorris800 at centurytel.net>
To: "Old Tube Radios" <boatanchors at theporch.com>
Sent: Saturday, April 05, 2014 6:46 PM
Subject: [BoatAnchors] Meter needle repair?

>I have acquired an old Ford Motor Co. "RRRE Model T-3"
> battery/alternator load tester, otherwise working fine,
> but the meter
> needle is broken off.
>
> Some idiot had attempted to "repair" it by sliding the
> business end of
> a ball-point pen over the stump of the needle, which was
> not only much
> too short but WAY too heavy (thus making the meter
> unusably
> position-sensitive, as a recent discussion of d'Arsonval
> movements
> here has made clear).
>
> I can attempt to rig something myself if I can find a
> similar needle
> from an otherwise trashed movement, a very fine straight
> piece of
> wire, broom straw, or anything light enough that can be
> superglued in
> place. Frankly I don't think my hands are steady enough.
> Is there
> anyone who does these kind of meter repairs?
>
> thanks

> Charles
>
> ps the presumed carbon pile (fixed) load is a tin can that
> looks
> exactly like a food can except for the insulated heavy
> stud terminals
> on one end. Never seen anything like it, and I think most
> testers now
> use nichrome elements...

I have never tried this but wonder if an old fashioned
clock or watch maker might be able to fix it.

--

Richard Knoppow
Los Angeles
WB6KBL
dickburk at ix.netcom.com

From kb8tad at gmail.com Mon Apr 7 13:14:00 2014
From: kb8tad at gmail.com (Rich Post)
Date: Mon, 7 Apr 2014 13:14:00 -0400
Subject: [BoatAnchors] ***JUNK MAIL*** Hallicrafters and A-Bombs (Hello,
NSA and HSA!)
In-Reply-To: <09A9560CF5B946EF89D0285F8848857C@DaddyPC>
References: <09A9560CF5B946EF89D0285F8848857C@DaddyPC>
Message-ID: <CAEJr0FvCDYaG63EDNWgBJeo_XLT-xhEiYE+cbK2LZ5VM=ae0Qg@mail.gmail.com>

A few years ago on a tour to Lowell Observatory in Flagstaff, I saw a
lonely Hallicrafters S-38 sitting on a shelf of the older observatory
wondering why it was there. Then it suddenly dawned on me, an accurate
clock with no light needed, tuned to WWV.

Rich KB8TAD

On Sun, Mar 30, 2014 at 10:55 AM, David Stinson <arc5 at ix.netcom.com> wrote:

> A friend sent me this link of photos from the preparations to drop Little
> Boy and Fatman. Fifth photo down shows a rack of equipment used to test
> Little Boy. At the top is a Hallicrafters set.
> Wonder why? Sure wish I had a hi-rez of this one,
> but I supposed it will be buried in some senseless
> "Top Secret" (Hello again, NSA!) archive until Judgment Day.
>

> 73 DE Dave AB5S
>
> -----
> BoatAnchors mailing list
> BoatAnchors at theporch.com
> <https://minime.theporch.com/mailman/listinfo/boatanchors>
>

From gumbear at pacbell.net Mon Apr 7 14:21:43 2014
From: gumbear at pacbell.net (Arden Allen)
Date: Mon, 7 Apr 2014 11:21:43 -0700
Subject: [BoatAnchors] ***JUNK MAIL*** Hallicrafters and A-Bombs (Hello, NSA and HSA!)
In-Reply-To: <CAEJr0FvCDYaG63EDNWgBJeo_XLT-xhEiYE+cbK2LZ5VM=ae0Qg@mail.gmail.com>
References: <09A9560CF5B946EF89D0285F8848857C@DaddyPC>
<CAEJr0FvCDYaG63EDNWgBJeo_XLT-xhEiYE+cbK2LZ5VM=ae0Qg@mail.gmail.com>
Message-ID: <0BA5712938EA4D56B0E7199BB38FE47F@KB6NAX>

Or keep up with the latest ball scores ;-)

Arden Allen
KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)

> A few years ago on a tour to Lowell Observatory in Flagstaff, I saw a lonely Hallicrafters S-38 sitting on a shelf of the older observatory wondering why it was there. Then it suddenly dawned on me, an accurate clock with no light needed, tuned to WWV.

Rich KB8TAD

From charlesmorris800 at centurytel.net Mon Apr 7 19:12:20 2014
From: charlesmorris800 at centurytel.net (Charles)
Date: Mon, 07 Apr 2014 18:12:20 -0500
Subject: [BoatAnchors] Meter needle repair?
In-Reply-To: <7c13k95983ou5hrjn96tkhon5hi5pmf3ep@4ax.com>
References: <bob1k9dmjt3k229on45rukompjafq6aoc9m@4ax.com>
<20140406211446.NHNV1.3822.root@cdptpa-web08>
<7c13k95983ou5hrjn96tkhon5hi5pmf3ep@4ax.com>
Message-ID: <60c6k9921nr8fj6n4ovlh730462g340qag@4ax.com>

I heard back from Bob at Larson Metercraft... they can fix it, but

they have a minimum fee of \$100 =:^0

Not for a \$10 instrument! But I will keep them in mind if I have something rare and valuable that needs a meter repair or replica.

Meanwhile I dyed a piece of broom straw black with a magic-marker and superglued it to the base of the pointer. It's not perfectly straight, which I wish I'd noticed before the glue set! Oh well, it won't be hard to remove and use a straighter piece ;)

-Charles

```
>>---- Charles <charlesmorris800 at centurytel.net> wrote:
>>> I have acquired an old Ford Motor Co. "RRRE Model T-3"
>>> battery/alternator load tester, otherwise working fine, but the meter
>>> needle is broken off.
>>>
>>> Some idiot had attempted to "repair" it by sliding the business end of
>>> a ball-point pen over the stump of the needle, which was not only much
>>> too short but WAY too heavy (thus making the meter unusably
>>> position-sensitive, as a recent discussion of d'Arsonval movements
>>> here has made clear).
>>>
>>> I can attempt to rig something myself if I can find a similar needle
>>> from an otherwise trashed movement, a very fine straight piece of
>>> wire, broom straw, or anything light enough that can be superglued in
>>> place. Frankly I don't think my hands are steady enough. Is there
>>> anyone who does these kind of meter repairs?
>>>
>>> thanks
>>> Charles
>>>
>>> ps the presumed carbon pile (fixed) load is a tin can that looks
>>> exactly like a food can except for the insulated heavy stud terminals
>>> on one end. Never seen anything like it, and I think most testers now
>>> use nichrome elements...
```

From arc5 at ix.netcom.com Sun Apr 6 14:17:12 2014
From: arc5 at ix.netcom.com (David Stinson)
Date: Sun, 6 Apr 2014 13:17:12 -0500
Subject: [BoatAnchors] SCR-245, BC-223 PE-125-AX Vibrator Supply
Message-ID: <42C6975820C140B9BD377610DBCB7CC6@DaddyPC>

Does anyone have experience with the PE-125-AX
vibrator power supply for the BC-223 transmitter?
The thing has two identical vibrator supplies
which are connected in parallel on the B+ output.

They have some heavy iron in them.
This transmitter puts-out 10 watts- not much.
In mine, one of the supplies has bad iron.
I pulled the fuses and the vibrator on the bad side.
The other side is operating well.

I can't imagine this 10W rig needs double the current
that one of these supplies can source.
Manual has no explanation.
Does anyone know why this unit has dual supplies?
Does the BC-223 really need the extra current
or is it some kind of "redundancy" thing?

73 DE Dave AB5S

From brianclarke01 at optusnet.com.au Mon Apr 7 20:54:44 2014
From: brianclarke01 at optusnet.com.au (Brian Clarke)
Date: Tue, 8 Apr 2014 10:54:44 +1000
Subject: [BoatAnchors] Meter needle repair?
References: <bob1k9dmjt3k229on45rukomjafq6aoc9m@4ax.com>
<20140406211446.NHNV1.3822.root@cdptpa-web08>
<7c13k95983ou5hrjn96tkhon5hi5pmf3ep@4ax.com>
<60c6k9921nr8fj6n4ovlh730462g340qag@4ax.com>
Message-ID: <41C322D2817F40B98A3AB2CD69F928B0@WORKSHOP>

Assuming the broom bristle is a natural fibre, it will respond well to heat.
Hold a lighted match or a cigarette lighter some distance away under the
bristle for a few seconds; then straighten the bristle in your fingers.

This was a trick I learned in re-aligning hammer handles in piano actions.

Had you not used the broom bristle, another solution I have found is to use
very small diameter (OD 0.040" or less), thin-walled aluminium tubing from
hobby shops.

73 de Brian, VK2GCE.

On Tuesday, April 08, 2014 9:12 AM, Charles said:

>I heard back from Bob at Larson Metercraft... they can fix it, but
> they have a minimum fee of \$100 =:^0
>
> Not for a \$10 instrument! But I will keep them in mind if I have
> something rare and valuable that needs a meter repair or replica.

>
> Meanwhile I dyed a piece of broom straw black with a magic-marker and
> superglued it to the base of the pointer. It's not perfectly straight,
> which I wish I'd noticed before the glue set! Oh well, it won't be
> hard to remove and use a straighter piece ;)
>
> -Charles

From gumbear at pacbell.net Tue Apr 8 04:51:26 2014
From: gumbear at pacbell.net (Arden Allen)
Date: Tue, 8 Apr 2014 01:51:26 -0700
Subject: [BoatAnchors] Meter needle repair?
In-Reply-To: <41C322D2817F40B98A3AB2CD69F928B0@WORKSHOP>
References: <bob1k9dmjt3k229on45rukompjaafq6aoc9m@4ax.com>
<20140406211446.NHNV1.3822.root@cdptpa-web08>
<7c13k95983ou5hrjn96tkhon5hi5pmf3ep@4ax.com>
<60c6k9921nr8fj6n4ovlh730462g340qag@4ax.com>
<41C322D2817F40B98A3AB2CD69F928B0@WORKSHOP>
Message-ID: <F09F656506B44DE0B406EFB488026127@KB6NAX>

You probably have a good supply of meter pointers in your kitchen odds-n-ends drawer - twist ties. Strip off the paper or plastic covering on one that's not too beat up, put one end of the wire in a vice and give it a few tugs to straighten it.

Paint your meter needle after its installed. Play some thin cardboard or stacked sheets of paper under the needle. Apply thinned paint with longitudinal strokes and slip the cardboard/paper out from under the needle immediately thereafter.

Arden Allen
KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)

>I heard back from Bob at Larson Metercraft... they can fix it, but
> they have a minimum fee of \$100 =:^0
>
> Not for a \$10 instrument! But I will keep them in mind if I have
> something rare and valuable that needs a meter repair or replica.
>
> Meanwhile I dyed a piece of broom straw black with a magic-marker and
> superglued it to the base of the pointer. It's not perfectly straight,
> which I wish I'd noticed before the glue set! Oh well, it won't be

> hard to remove and use a straighter piece ;)
>

From k1lky68 at gmail.com Tue Apr 8 08:29:51 2014
From: k1lky68 at gmail.com (Roy Morgan)
Date: Tue, 8 Apr 2014 08:29:51 -0400
Subject: [BoatAnchors] Meter needle repair?
In-Reply-To: <F09F656506B44DE0B406EFB488026127@KB6NAX>
References: <bob1k9dmjt3k229on45rukompjafq6aoc9m@4ax.com>
<20140406211446.NHNV1.3822.root@cdptpa-web08>
<7cl3k95983ou5hrjn96tkhon5hi5pmf3ep@4ax.com>
<60c6k9921nr8fj6n4ovlh730462g340qag@4ax.com>
<41C322D2817F40B98A3AB2CD69F928B0@WORKSHOP>
<F09F656506B44DE0B406EFB488026127@KB6NAX>
Message-ID: <D982DB75-9F0C-47C8-BA10-3F59AC6F6498@gmail.com>

On Apr 8, 2014, at 4:51 AM, Arden Allen <gumbear at pacbell.net> wrote:

> You probably have a good supply of meter pointers in your kitchen odds-n-ends drawer - twist ties. Strip off the paper or plastic covering on one that's not too beat up, put one end of the wire in a vice and give it a few tugs to straighten it.

>

> Paint your meter needle after its installed. Play some thin cardboard or stacked sheets of paper under the needle. Apply thinned paint with longitudinal strokes

With a small brush presumably - you won?t need to thin more than a few drops.

> and slip the cardboard/paper out from under the needle immediately thereafter.

To keep the needle from painting itself onto the cardboard.

Great ideas - Ill add this to my meter repair notes.

Thanks,

Roy

Roy Morgan
RoyMorgan at alum.mit.edu
K1LKY Since 1958

From dxguy at earthlink.net Tue Apr 8 08:24:38 2014
From: dxguy at earthlink.net (don davis)
Date: Tue, 8 Apr 2014 05:24:38 -0700
Subject: [BoatAnchors] Meter needle repair?
In-Reply-To: <F09F656506B44DE0B406EFB488026127@KB6NAX>
References: <bob1k9dmjt3k229on45rukompjafq6aoc9m@4ax.com>
<20140406211446.NHNV1.3822.root@cdptpa-web08>
<7cl3k95983ou5hrjn96tkhon5hi5pmf3ep@4ax.com>
<60c6k9921nr8fj6n4ovlh730462g340qag@4ax.com>
<41C322D2817F40B98A3AB2CD69F928B0@WORKSHOP>
<F09F656506B44DE0B406EFB488026127@KB6NAX>

Message-ID: <!!&!
AAAAAAAAAAAAA03NLm+r0kBFo+eoE0IVyavCgAAAAEAAAAD0eN9l67fdMlKtfXqH8H0sBAAAAAA
==@earthlink.net>

Guitar strings (aka piano wire) works dandy... Comes in many sizes and materials.

73 de don ad6pb

-----Original Message-----

From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf Of Arden Allen
Sent: Tuesday, April 08, 2014 1:51 AM
To: Brian Clarke; Charles; Old Tube Radios
Subject: Re: [BoatAnchors] Meter needle repair?

You probably have a good supply of meter pointers in your kitchen odds-n-ends drawer - twist ties. Strip off the paper or plastic covering on one that's not too beat up, put one end of the wire in a vice and give it a few tugs to straighten it.

From ddillman at igc.org Thu Apr 10 13:24:08 2014
From: ddillman at igc.org (Richard Dillman)
Date: Thu, 10 Apr 2014 10:24:08 -0700 (GMT-07:00)
Subject: [BoatAnchors] MRHS International Marconi Day Event!
Message-ID: <28982780.1397150648275.JavaMail.root@mswamui-cedar.atl.sa.earthlink.net>

International Marconi Day is coming up on 26 April! I know this event (celebrating the birthday of the Great Man Guglielmo Marconi) is probably already in your calendar but this is an event not to be missed.

The Maritime Radio Historical Society will set up two receiving and control positions at the original Marconi receive site at Marshall, CA. KSM and K6KPH operators at the restored Marconi station manager's cottage will key the original KPH transmitters at the original Marconi transmit site in Bolinas, CA.

You're invited to this public event!

You can come to visit or you can come to operate. If you have a commercial ticket bring it along and exercise the privileges of your license. If you want, the KSM Chief Operator (me!) will endorse your license for commercial operations. If you want to operate K6KPH just show up, no license required. Bring your own key & cans or use ours.

We'll have some exhibits on display as well.

This is a beautiful site in a beautiful area. So why not spend a Saturday on the coast, suck up some oysters and see genuine radio history in action?

Date: Saturday, 26 April

Time: 1000 - 1600pdt

Location: Marconi Conference Center, Marshall, CA.

Full details and photos here:

<http://tinyurl.com/lu3dl7t>

VY 73,

RD

=====
Richard Dillman, AE-12-446
Chief Operator, Coast Station KSM
Maritime Radio Historical Society
<http://www.radiomarine.org>
=====

From landn2 at frontier.com Fri Apr 11 02:38:44 2014
From: landn2 at frontier.com (Liles and Naomi Garcia)
Date: Thu, 10 Apr 2014 23:38:44 -0700
Subject: [BoatAnchors] Questions About Speakers And Universal Output
Transformers
Message-ID: <OBEDKFDGHEPDGADPPEHFMEPOEKAA.landn2@frontier.com>

Good evening Everybody,

I am going to be like Dave and ask for help from " Smart People ". I am taking my SW-45 to my antique radio club's (NorthWest Vintage Radio Society -Portland, Oregon) swap meet this Saturday. I am going to show it playing so that people can see a 1930 regen radio actually working. I would like to use a big speaker to give the 45's a good work out. I am having trouble matching up a speaker, and I need your all's help and advice.

First of all, I need speaker advice. I have two speakers that match my Hammarlund HQ-129-X's. Of course, they don't have " Hammarlund " written anywhere on them. The manual calls for a 6 ohm speaker to match the receiver's output. My speakers have Jensen drivers, one is 6 inches and measures 6.2 ohms; the other is 10 inches and measures 5.6 ohms. These are dc resistance measurements. Did Jensen really make 6 ohm speakers back then? Is my 10 inch speaker (5.6 ohms) a 6 ohm nominal impedance speaker; and is my 6 inch speaker (6.2 ohms) a 6 ohm nominal impedance or an 8 ohm nominal impedance speaker?

I have a third speaker that is in an auditorium enclosure that looks better with my SW-45. It is a 12 inch Quam speaker and is newer than my other two speakers. It measures 8.4 ohms dc resistance, so does that mean that it is an 8 ohm nominal impedance speaker? I know that speaker voice coils are not very big, so is the dc resistance essentially the voice coil impedance?

Last question is about my Stancor A-3852 Universal Output Transformer. I did not have an original output transformer for my radio so I put in the Stancor transformer. I wired it for a 4 ohm output speaker according to the chart for the transformer. I am guessing that the Quam speaker is an 8 ohm speaker. I need to know which lugs that I use for an 8 ohm speaker. I would prefer to load my 45's as correctly as I can. I read the connection information from a chart that was on Ebay, but I didn't copy the chart. So, does anyone have the impedance matching chart for the A-3852, and can tell me how to connect my 8 ohm speaker? I have looked for this chart on the InterNet with no luck. I am loading the 45's with 8 kohms plate to plate and I am running 230 volts on the plates. This gives me about 30 ma through the 45's, so I am not running them really hard.

Many thanks in advance for your all's help and advice!!

Best Regards From Aloha, Oregon,
Liles Garcia
landn2 at frontier.com

From gumbear at pacbell.net Fri Apr 11 06:49:28 2014
From: gumbear at pacbell.net (Arden Allen)
Date: Fri, 11 Apr 2014 03:49:28 -0700
Subject: [BoatAnchors] Questions About Speakers And Universal
OutputTransformers
In-Reply-To: <OBEDKFDGHEPDGADPPEHFMEPOEKAA.landn2@frontier.com>
References: <OBEDKFDGHEPDGADPPEHFMEPOEKAA.landn2@frontier.com>
Message-ID: <AEB4ABE7D4404901B6899A93657A0AE6@KB6NAX>

Liles,

>I know that speaker voice coils are not
very big, so is the dc resistance essentially the voice coil impedance?
.....

Prezactly. If one wants to ring the knobs off of his test equipment he'll find that the ***average*** impedance of a speaker is about 10-20% greater than the voice coil resistance. So not only is the voic coil ohmic resistance the main determinant of impedance it is also why speakers are not very efficient. Most of the energy sent to a speaker goes up in heat instead of pumping air (so much for gold plated solid silver silk wrapped teflon insulated baptized in loony juice speaker wire)

Regarding your output transformer, the primary/secondary impedance ratio is the square of the turns ratio. The voltage ratio is likewise proportional to the turns ratio. Measure the sine wave voltages on primary and secondary, secondary connected to a load resistor for accuracy. If the voltage ratio is 10:1 then the impedance ratio is 100:1. With an 8 ohm load, for example, the plate to plate load would be 800 ohms.

RCA HB-3 says 45's like to see a plate-plate load of about 5000 ohms so you're not too far off.

Here's a gadget you can have fun with:
<http://www.maxmcarter.com/classecalcs/tratiocalc.html>

Arden Allen
KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)
.....

From arc5 at ix.netcom.com Fri Apr 11 17:10:55 2014

From: arc5 at ix.netcom.com (David Stinson)
Date: Fri, 11 Apr 2014 16:10:55 -0500
Subject: [BoatAnchors] ***JUNK MAIL*** BC-223- Fixing a Rotted Pot Metal Casting. Maybe.
Message-ID: <AD0969FEDF764B289FC65A9009967C0D@DaddyPC>

Under the bottom-front cover of the BC-233 transmitter, between the ganged "M0" and "PA" capacitors, there is a "pot-metal" casting that holds the end bearing for the tuning shaft (this photo used with thanks to Dennis, W7QH0). The green arrow points to the casting:

<http://home.netcom.com/~arc5/BC-223/BC223bottom.jpg>

There is a bar at the bottom of the casting that connects between the two capacitor housings. A "J"-shaped post extends from this bar to hold the rear bearing of the tuning shaft. This casting is "pot metal" and in mine, it was "rotten." The "J" had broken from the bar and also split at the inside bend. Here is a photo of what I found:

http://home.netcom.com/~arc5/BC-223/IMG_3078.JPG

A closer look at the metal rot:

http://home.netcom.com/~arc5/BC-223/IMG_3073.JPG
http://home.netcom.com/~arc5/BC-223/IMG_3074.JPG

These piece were very fragile and crumbly.

Here's the end of the tuning shaft with the pieces removed:

http://home.netcom.com/~arc5/BC-223/IMG_3072.JPG

A gentleman I know who has repaired hundreds of engine blocks for a major oil field contractor told me about a "Loctite" product. It is a very thin, green liquid that is designed to be applied to already-mated bolts, nuts and screws etc. It "wicks" into the junction between the fasteners getting into the smallest spaces and pores where it forms a hard, glass-like binder between the two metals. He said he used this to seal hair-line cracks and fractures in metals. Here is the "Permatex" version of this product:

http://home.netcom.com/~arc5/BC-223/IMG_3076.JPG

It's not cheap; this little bottle was \$8.
But it only take a couple of drops to work.
The application notes for this
product, in .pdf format. are here:

[http://www.permatex.com/component/documents/?
view=tds&format=raw&filename=29000.pdf&market=automotive](http://www.permatex.com/component/documents/?view=tds&format=raw&filename=29000.pdf&market=automotive)

I infused the "rotten" parts with this product and
let them set over night. The product worked
as claimed. I can press and squeeze the pieces with
my fingers without bits crumbling away. Not likely
to be as strong as "new," but better than what I had
and likely to serve. Here are close-up photos
of the product cured in the metal cracks:

http://home.netcom.com/~arc5/BC-223/IMG_3080.JPG
http://home.netcom.com/~arc5/BC-223/IMG_3084.JPG

As you can see, the product "wicked" into even the
smallest cracks. It's speced for filling only up
to 5-thousandths, so wouldn't do for really big defects
but it appears- so far- to be very helpful with bad
pot metal.
I've got the two pieces of the "J" epoxied
and will epoxy it back to the bottom bar this evening.
We'll see how it works out.

GL OM ES 73 DE Dave AB5S

From 1oldlens1 at ix.netcom.com Fri Apr 11 12:04:48 2014
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Fri, 11 Apr 2014 09:04:48 -0700
Subject: [BoatAnchors] Questions About Speakers And Universal
OutputTransformers
References: <OBEDKFDGHEPDGADPPEHFMEPOEKAA.landn2@frontier.com>
Message-ID: <A22D5775E8E34B819856915752A7D723@VALUED20606295>

----- Original Message -----

From: "Liles and Naomi Garcia" <landn2 at frontier.com>
To: <boatanchors at minime.theporch.com>
Sent: Thursday, April 10, 2014 11:38 PM
Subject: [BoatAnchors] Questions About Speakers And

Universal OutputTransformers

> Good evening Everybody,
>
> I am going to be like Dave and ask for help from " Smart
> People ". I am
> taking my SW-45 to my antique radio club's (NorthWest
> Vintage Radio
> Society -Portland, Oregon) swap meet this Saturday. I am
> going to show it
> playing so that people can see a 1930 regen radio actually
> working. I would
> like to use a big speaker to give the 45's a good work
> out. I am having
> trouble matching up a speaker, and I need your all's help
> and advice.
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> First of all, I need speaker advice. I have two speakers
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> anywhere on them. The manual calls for a 6 ohm speaker to
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> then? Is my 10 inch speaker (5.6 ohms) a 6 ohm nominal
> impedance speaker;
> and is my 6 inch speaker (6.2 ohms) a 6 ohm nominal
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> that looks better
> with my SW-45. It is a 12 inch Quam speaker and is newer
> than my other two
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> that mean that it is
> an 8 ohm nominal impedance speaker? I know that speaker
> voice coils are not
> very big, so is the dc resistance essentially the voice
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> Transformer. I
> did not have an original output transformer for my radio
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> InterNet with no luck. I am loading the 45's with 8 kohms
> plate to plate
> and I am running 230 volts on the plates. This gives me
> about 30 ma through
> the 45's, so I am not running them really hard.
>
> Many thanks in advance for your all's help and advice!!
>
> Best Regards From Aloha, Oregon,
> Liles Garcia
> landn2 at frontier.com
>

Loudspeaker impedance is not the DC resistance of the voice coil but may be near it for low cost speakers. The impedance is a combination of the DC resistance and an ac impedance which is the result of the whole moving system including the air coupled to the diaphragm as reflected through the electrical terminals. In particular, the impedance varies with frequency and can become quite high at the cone resonant frequency. The advertised impedance is usually measured at 400 hz for full range speakers. Typical small speakers with a DC resistance of around 6 ohms are probably about 8 ohm speakers. While the right instrument to measure this is an impedance bridge you can get a reasonably close measurement by using an audio oscillator, resistor of known value and AC meter.

An output transformer is intended to present the "optimum" load to the amplifier from a speaker. The load is what will deliver the most power at lowest distortion to the speaker. Many single tube output amplifiers want a plate

load of around 5k to 10k ohms so a "universal" transformer will have taps at about these values when operating from one or more "standard" loudspeaker impedance values. Over the years various values have been adopted as standard speaker impedances, from 3.2 ohms to 8 ohms. Since the impedance is not really very critical assuming a speaker impedance of about 6 ohms will work with nearly any low impedance speaker.

Again, the DC resistance of the windings will not tell you much but you can measure the ratio with AC using an oscillator and voltmeter. The voltage is proportional to the turns ratio, the impedance is proportional to the square of the turns ratio, i.e., double the voltage means four times the impedance. The relation is constant regardless of the value of the impedance on each side but the frequency response will change due to the inductance and distributed capacitance of the windings but for a simple amplifier one can use the same transformer over a rather wide range of impedances.

The Hammarlund speakers sold for the older Super-Pro and the HQ-120-X and 129-X appear to be Jensen speakers in a Bud cabinet.

--

Richard Knoppow
Los Angeles
WB6KBL
dickburk at ix.netcom.com

From bill at iaxs.net Sat Apr 12 12:10:33 2014
From: bill at iaxs.net (Bill Hawkins)
Date: Sat, 12 Apr 2014 11:10:33 -0500
Subject: [BoatAnchors] Questions About Speakers And Universal
OutputTransformers
In-Reply-To: <OBEDKFDGHEPDGADPPEHFMEPOEKAA.landn2@frontier.com>
References: <OBEDKFDGHEPDGADPPEHFMEPOEKAA.landn2@frontier.com>
Message-ID: <C5E85520565044CF9065B22495874ED6@system072>

Well, speaker impedance matching is not a precise art.

Many years ago, I used a HP 200CD audio generator, an approximately 10:1 transformer (faded memory) and a bare 15" speaker (no enclosure - the Klipsch horn hadn't been built yet), a dropping resistor on the generator side, and an AC VTVM to check out the speaker impedance.

It turns out that the impedance is nearly the DC coil resistance at cone resonance (near 40 Hz IIRC) and rises rapidly above that frequency. What I learned was that vacuum tube amplifiers are designed to deliver rated power at speaker resonance. The power required from the amplifier drops off away from resonance. Negative feedback from the low impedance side of the output transformer regulates the voltage to the coil to maintain some fidelity to the low level audio input.

My advice, FWIW, is to pick a speaker that sounds good and forget about impedance matching. We are not worried about reflections from a mismatch here. Go with the auditorium speaker if a crowd will be listening, or something less if there's just a few people standing around your display. It's unlikely that you will be driving your amplifier power into distortion at tolerable volume levels.

Bill Hawkins

From 1oldlens1 at ix.netcom.com Sat Apr 12 13:41:12 2014
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Sat, 12 Apr 2014 10:41:12 -0700 (GMT-07:00)
Subject: [BoatAnchors] Questions About Speakers And
UniversalOutputTransformers
Message-ID: <15127940.1397324472552.JavaMail.root@elwamui-rustique.atl.sa.earthlink.net>

-----Original Message-----

>From: Bill Hawkins <bill at iaxs.net>
>Sent: Apr 12, 2014 9:10 AM
>To: 'Liles and Naomi Garcia' <landn2 at frontier.com>, boatanchors at minime.theporch.com
>Subject: Re: [BoatAnchors] Questions About Speakers And Universal
OutputTransformers
>
>Well, speaker impedance matching is not a precise art.
>
>Many years ago, I used a HP 200CD audio generator, an approximately 10:1
>transformer (faded memory) and a bare 15" speaker (no enclosure - the
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>something less if there's just a few people standing around your
>display. It's unlikely that you will be driving your amplifier power
>into distortion at tolerable volume levels.
>
>Bill Hawkins
>

Well, I must disagree and am puzzled by your measurements. The ratio of DC resistance to impedance depends on both the efficiency of the speaker and the frequency at which the impedance is measured. A simple measurement of current using an oscillator and a resistor with a value well in excess of the maximum impedance expected, will show you where the resonance is and allow you to measure the resonant Q. There will be a large peak at the fundamental cone resonance for an un-mounted speaker. Depending on the strength of the magnet it may be ten or more times the impedance at mid-range. The published impedance of most low frequency or full range speakers is measured at 400hz. If the speaker is not very efficient its impedance at this frequency will not be much different than the DC resistance. When you measure the impedance or even just the simple voltage rise using the resistor and oscillator technique part of what you are seeing is called motional impedance. As the cone and voice coil moves it acts as a generator producing a back EMF. All electric motors do this and a speaker is a sort of motor. The amount of the motional impedance depends on the strength of the magnetic field at the voice coil, the resistance and mechanical and acoustical properties which are reflected as electrical characteristics at the voice coil terminals. One can learn a lot about a speaker and its enclosure by measuring this impedance.

Most amplifiers are designed to deliver the greatest power at the mid-range impedance, not the cone resonance. Now, in an amplifier with negative voltage feedback around the output, typical of high fidelity amplifiers but not the simple amplifiers in most radio sets, the impedance is determined by the amount of feedback. The value of the load is determined by the nature of the amplifier and is usually the value that will yield the best compromise between output power and low distortion. The load seen by the amplifier where there is an output transformer is the value connected to the output side of the transformer as changed by the ratio of the transformer. A different speaker side load may actually result in more power out but at the price of greater distortion.

There is another factor called damping factor that shows up at the output. It is not very intuitive but is the ratio of the plate resistance of the amplifier to the value of the load its seeing. Because the speaker acts as a generator the damping resistance tends to short it and change the way the speaker vibrates.

There is an optimum value for damping factor for each combination of a speaker and enclosure. In general, the damping factor of single Class-A pentode amplifiers without feedback is quite poor so speaker resonance is exaggerated compared to what one would hear using a triode amplifier or any kind of amplifier with adequate feedback.

From spr at earthlink.net Sat Apr 12 10:28:29 2014
From: spr at earthlink.net (Scott Robinson)
Date: Sat, 12 Apr 2014 07:28:29 -0700
Subject: [BoatAnchors] Questions About Speakers And Universal
OutputTransformers
In-Reply-To: <A22D5775E8E34B819856915752A7D723@VALUED20606295>
References: <OBEDKFDGHEPDGADPPEHFMEPOEKAA.landn2@frontier.com>
<A22D5775E8E34B819856915752A7D723@VALUED20606295>
Message-ID: <53494D8D.20104@earthlink.net>

***Scott remarks:

Richard Knoppow wrote:

> Loudspeaker impedance is not the DC resistance of the voice coil
> but may be near it for low cost speakers.

***DC resistance measurements will enable you to distinguish 4 ohm from 8 ohm speakers, which is in practice all you need to do for repairs.

> An output transformer is intended to present the "optimum" load to
> the amplifier from a speaker. The load is what will deliver the most
> power at lowest distortion to the speaker. Many single tube output
> amplifiers want a plate load of around 5k to 10k ohms so a "universal"
> transformer will have taps at about these values when operating from one
> or more "standard" loudspeaker impedance values. Over the years various
> values have been adopted as standard speaker impedances, from 3.2 ohms
> to 8 ohms. Since the impedance is not really very critical assuming a
> speaker impedance of about 6 ohms will work with nearly any low
> impedance speaker.

***It's worth distinguishing between 4 and 8 ohm speakers if you have a transformer with enough adjustability.

***IMPORTANT: If you use a transformer designed for push-pull service with a single ended output, it won't work very well. The core will now be DC magnetized, and the inductance will fall a lot, resulting in audibly worse low frequency response and higher distortion. Transformer cores for single ended service have an air gap (you can't see it, it's

usually inside the winding) which fixes this problem. I have had to fix this problem in, I think, three radios I've worked on over the last few years.

From listown at nanniandjack.com Sat Apr 12 17:50:03 2014
From: listown at nanniandjack.com (Jack G F Hill)
Date: Sat, 12 Apr 2014 16:50:03 -0500
Subject: [BoatAnchors] The Symposium Paradigm
Message-ID: <5349B50B.2050306@nanniandjack.com>

Gang-

Long ago (just shy of 24 years) we moved the list to theporch.com and agreed that we should operate as if we were engaged in a symposium. Using this paradigm, it makes sense to only include the relevant sections of a post one is responding to... If we were gathered physically together, we would not repeat everything verbatim that the person to whom we are responding had said, including all the information included in his symposium profile. Instead, we would only repeat those parts of a comment or question that you wished to amplify, refute, or agree with.

Perhaps in the early days of 24 years ago we were somewhat concerned about bandwidth. That is not at all the case today. We are simply trying to maintain the civility, the clean and clear signal-to-noise ration this list has enjoyed since the beginning, and adhere to the paradigm of the symposium.

Many of us read the early list with relatively primitive text-based mail readers... today, with typical GUI mailers, it takes only a quick mouse swipe to remove text not needed to maintain context. And, with so many members reading digest versions of the list, including all the extra text like signature blocks and message footers is totally unnecessary. By not editing with a few simple mouse clicks and swipes shows the rest of the list members that you don't respect their time and energy... it is rude and would not be accepted in a symposium, so why here?

The part I really do not understand is that some members get all butt hurt when asked politely to "Please trim the quoted text so that only the parts needed to maintain context are left - certainly the signature block and message footer of the quoted post are not needed - and then re-submit" and either make the bandwidth argument or just stay mad and pout. I am simply trying to maintain the high signal-to-noise of this group of extraordinary people.

If you wish to have the list become a free-for-all with no one monitoring and trying to keep the list civil and functioning, I will

abide by your wishes and step away. You will need to find another server to host the list as Phil and I do not want that kind of turmoil spewing from our domain. I believe the vast majority of you prefer the symposium paradigm and so unless I hear (in private email, off list) a great deal of protest to my efforts to keep the list at the high level we have enjoyed for 24 years, I will continue to moderate people who tend not to understand the Symposium Paradigm.

Now, back to firebottles...

--

Jack Hill, W4KH - BoatAnchors Listowner/Archiver
listown at nanniandjack.com

"Plus ca change, plus c'est la meme chose"

"Il n'y a que les idiots qui ne changent jamais d'idee"

From gumbear at pacbell.net Sat Apr 12 18:08:22 2014

From: gumbear at pacbell.net (Arden Allen)

Date: Sat, 12 Apr 2014 15:08:22 -0700

Subject: [BoatAnchors] Questions About Speakers And
UniversalOutputTransformers

In-Reply-To: <C5E85520565044CF9065B22495874ED6@system072>

References: <0BEDKFDGHEPDGADPPEHFMEPOEKAA.landn2@frontier.com>
<C5E85520565044CF9065B22495874ED6@system072>

Message-ID: <4F69729FB50F4A8F93384005C878624A@KB6NAX>

"Well, speaker impedance matching is not a precise art."

Now that's a quotable quote. Can I use it? (just kidding :-)

So I see we have a contradiction in the works, i.e., which way does the impedance go at cone resonance? Now let's not get confused, there is cone resonance and there is box resonance. Ideally we don't want either. So I think the reason for the ups and downs in impedance with respect to frequency is that we are really dealing with lots of resonance "nodes" because a voice coil just can't do that all by itself. Now I hope that settles that!

Arden Allen
KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)

From kb8tad at gmail.com Sat Apr 12 21:00:13 2014

From: kb8tad at gmail.com (Rich Post)

Date: Sat, 12 Apr 2014 21:00:13 -0400

Subject: [BoatAnchors] Hallicrafters S-76 Run 3 question

Message-ID: <CAEJr0FsMkq0oKuTLFGH5777ABw_+UhWnFEaYVMK7xL9DK4KcdA@mail.gmail.com>

Does anyone know the unique characteristics of a Run 3 version of the S-76?

My Run 3 is UL approved with a box-like fish paper cover for the S-meter terminals. Do the earlier versions have UL approval and the fish paper cover?

Tnx es 73,
Rich KB8TAD

From bkemp at bobbkemp.com Sat Apr 12 22:38:49 2014

From: bkemp at bobbkemp.com (bkemp at bobbkemp.com)

Date: Sat, 12 Apr 2014 21:38:49 -0500

Subject: [BoatAnchors] ***JUNK MAIL*** 5R4

Message-ID: <A22BAA643AFB4D04B2BA76F2BEE30B85@Bob>

Anyone have a couple of solid state 5R4's they'd sell.

Bob
wa0vrc

Bob Kemp
651-764-4788

From kd5byb at kd5byb.net Sun Apr 13 13:05:24 2014

From: kd5byb at kd5byb.net (Ben Hall)

Date: Sun, 13 Apr 2014 12:05:24 -0500

Subject: [BoatAnchors] More Thoughts on Filtering Capacitors

In-Reply-To: <5336E040.5090802@kd5byb.net>

References: <5336E040.5090802@kd5byb.net>

Message-ID: <534AC3D4.6030208@kd5byb.net>

Good afternoon all,

I received my orders for the several motor-run capacitors I noted I was going to buy in my previous post.

There was a surprise with one of the units. This is a Cornell-Dubilier made unit in Mexico and is protected. It came from an HVAC-parts supply store, so the handy sticker on the can that was printed by the seller had the helpful two warnings:

"For use with 2HP units only." So I guess you had better make sure your

tube power supply is 2HP before using this capacitor. ;)

It also says:

"Contains internal bleed resistor." This was the surprise. Reviews of the literature before purchase never suggested that such a unit might exist. I can understand why they would incorporate an internal bleeder - once when I was repairing a fan belt, my finger managed to contact an uninsulated wire and I got quite a zap...even after it had been unplugged for quite some time. The bleed resistor measured about 200k ohms.

The bleed resistor frustrated my Chinese/eBay LCR/ESR meter so I don't have any ESR readings to share.

One of the other units was made by Quality Engineering, carrying the QE Quality name brand. I generally shy away from anything with "Quality" in its name, as usually that's a sure sign that it's not quality! But...the price was right, their webpage showed a US-presence, so why not.

It appears to be just as nicely put together as the CDE capacitor, but does NOT have the internal bleed resistor. No surprises on the LCR/ESR meter, the ESR was for all intents and purposes indistinguishable from the ESR of the shorted test leads, and the capacitance was well within 10%.

Both units were tested via a high value resistor at 400 VDC, the high end of my variable power supply. Leakage for the unit with the bleed resistor was as you'd expect for 200k. Leakage for the QE unit was very small, essentially zero.

thanks much and 73,
ben, kd5byb

From w8au at sssnet.com Mon Apr 14 20:39:10 2014

From: w8au at sssnet.com (w8au at sssnet.com)

Date: Mon, 14 Apr 2014 20:39:10 -0400

Subject: [BoatAnchors] Hallicrafters S-76 Run 3 question

In-Reply-To: <CAEJr0FsMkq0oKuTLFGH5777ABw_+UhWnFEaYVMK7xL9DK4KcdA@mail.g
mail.com>

References: <CAEJr0FsMkq0oKuTLFGH5777ABw_+UhWnFEaYVMK7xL9DK4KcdA@mail.gmail.com>

Message-ID: <mailman.2474.1397522297.241.boatanchors@theporch.com>

At 09:00 PM 4/12/2014, Rich Post wrote:

>Does anyone know the unique characteristics of a Run 3 version of the S-76?
>

>My Run 3 is UL approved with a box-like fish paper cover for the S-meter
>terminals. Do the earlier versions have UL approval and the fish paper
>cover?

I have a Run 2 and the meter terminals are covered with a box-like grey cardboard cover. Could be the same thing you have.

Perry w8au

From kb8tad at gmail.com Mon Apr 14 21:09:08 2014
From: kb8tad at gmail.com (Rich Post)
Date: Mon, 14 Apr 2014 21:09:08 -0400
Subject: [BoatAnchors] Hallicrafters S-76 Run 3 question
In-Reply-To: <mailman.2474.1397522297.241.boatanchors@theporch.com>
References: <CAEJr0FsMkq0oKuTLFGH5777ABw_+UhWnFEaYVMK7xL9DK4KcdA@mail.gmail.com>
<mailman.2474.1397522297.241.boatanchors@theporch.com>
Message-ID: <CAEJr0FuLuex+F0tgaTWn9HQ5RtGmny8fFH=USYUAZX1X0Gg3hA@mail.gmail.com>

Hi Perry,

Yes, the grey cardboard box describes what is on my Run 3 S-meter terminals. Does your run 2 have the UL sticker on the back of the chassis? The cardboard is "fish paper" and is often seen as insulation in electrical switch boxes. I am assuming that UL required it for approval of a radio with accessible high voltage points on the top of the chassis.

Per the picture in the Sams Photofact, the original S-76 did not have skirted knobs. The pic of the S-meter cover as illustrated in Sams appears to be a cylindrical insulator of sorts, not the enclosed box-like structure of my Run 3 and your Run 2.

73, Rich KB8TAD

I have a Run 2 and the meter terminals are covered with a box-like

> grey cardboard cover. Could be the same thing you have.

>

>

From ebjr37 at charter.net Tue Apr 15 00:00:08 2014
From: ebjr37 at charter.net (Sandy Blaize)
Date: Mon, 14 Apr 2014 23:00:08 -0500
Subject: [BoatAnchors] Looking for Belden 8014 wire.....
Message-ID: <534CAEC8.5060005@charter.net>

Looking for reel of Belden 8014 "Antenna wire". This usually came in small hanks of wire of around 25' but also in larger "reels" of 250 or

500 ft. The "Reels" were about the size of a typical metal spool of 20 gauge hookup wire.

The wire itself is 28 gauge stranded (13 strands of #36 tinned wire) with a very flexible medium gray plastic jacket about 1.2 mm. in diameter. (about .04") It used to be very common in the 50's and 60's. Was used for AC/DC "cheapie" radio antennas inside. Usually in 3 or 4 tube TRF or regenerative BC band sets. We used to call them ("kiddie sets" back then.)

Would anyone have a "dusty" reel of that exact wire hanging around or in the junkbox? I am not looking for the small "hanks" but preferably a full reel or a partial reel that was originally a 250 or 500 foot spool. I know this is a shot in the dark, but you can never tell what is out there unless you ask!

73,
Sandy W5TVW

From arc5 at ix.netcom.com Tue Apr 15 20:01:40 2014
From: arc5 at ix.netcom.com (David Stinson)
Date: Tue, 15 Apr 2014 19:01:40 -0500
Subject: [BoatAnchors] ***JUNK MAIL*** Short Wave Broadcast People: I Don't Get It.
Message-ID: <E33FAFD5D46A43FA90DC05273D7D07D1@DaddyPC>

I know there are some folks here who worked in SWBC.
As you know, most of it's gone now. |
But there are still a few big stations out there in the U.S. running multiple 100KW transmitters 24/7 and all they broadcast is religious "fringe" material. One old guy who claims to have a personal hot-line to God is on several of these all day, every day.

I do not understand the economics of running these stations. They've got big maintenance costs, staffing and monster electric bills, yet one source tells me that the "Jesus Radio" audience runs about 200 people on a good day and many hours with no one listening at all. The charge for hours of programming on these stations isn't very high, but 24/7 can amount to a lot each month.

I don't get it. The math just "don't add-up."
How do these stations pay the bills?
Surely "Brother Stair" doesn't get enough from

the 200 people listening to him to support
multiple 100KW transmitters, 24/7?
What am I missing here??

73 Dave AB5S

From arc5 at ix.netcom.com Wed Apr 16 07:54:20 2014
From: arc5 at ix.netcom.com (David Stinson)
Date: Wed, 16 Apr 2014 06:54:20 -0500
Subject: [BoatAnchors] [Boatanchors] Short Wave Broadcast Folks:
In-Reply-To:
<49430f7a2c17425099df11fe2b296d84@BLUPR03MB392.namprd03.prod.outlook.com>
References: <58158DD257F04510B101AF0502391EEC@DaddyPC>
<C045A70A183C42A1B09BBF463E5841C9@VALUED20606295>
<49430f7a2c17425099df11fe2b296d84@BLUPR03MB392.namprd03.prod.outlook.com>
Message-ID: <BAFE166BE3724D219345BD32C06771F7@DaddyPC>

That's all good, but I still don't understand how
they pay for it all. Those "deep pockets" would need to
be deeper than the Titanic to run 4-500 KW worth of
SWBC stations and staff 24/7/365, and they don't have
a lot of "old lady" audience to send-in their
"widow's mite," like the tele-vangelist and cable preachers.
There's something else besides that at work here.

Dave S.

From ebjr37 at charter.net Wed Apr 16 10:58:46 2014
From: ebjr37 at charter.net (Sandy Blaize)
Date: Wed, 16 Apr 2014 09:58:46 -0500
Subject: [BoatAnchors] [Boatanchors] Empire of the Air
In-Reply-To: <534E0B27.5020200@ar88.net>
References: <f0039e07c74e41c69152058c6f75ffae@mail.broadtechsolutions.com>
<534E0B27.5020200@ar88.net>
Message-ID: <534E9AA6.6070104@charter.net>

I have read thru this book probably no less than 5-6 times! Extremely
interesting and about three very remarkable people basically different
in their own ways. If Armstrong hadn't leaped out of the hotel window,
he would have been able to see the late blossoming of his "wide band FM"
go wild. It would have been a vindication of Crosby telling him his
system was "not mathematically possible and it would fail".

I found the book much more fascinating than the TV version. Every time

I read the book, things appear that I didn't know were there. It is very difficult to put down even though I have read it several times. The story of a poor Russian Jew who created an "Empire" like RCA that existed for years before their downfall. A brilliant inventor who gave us regeneration, the superheterodyne circuits and wideband HiFi radio, and the "audion" that the inventor could not really explain how it worked! Sarnoff, Armstrong and DeForest! Strikingly different individuals.

I'll have to see if I can find the "Fireside Theater" CD version of the story. Have not heard that one yet.

73 to all,

Sandy W5TVW

On 4/15/2014 11:46 PM, Al Klase wrote:

> Folks,

>

> My favorite version of The Empire of the Air is the little known radio

> drama version written and directed by Dave Ossman of Firesign Theater

> fame. This was released on CD around 2004, but has dropped out of

> sight. Fortunately, it was included the 70th Anniversary of FM Radio

> broadcast from the Armstrong Tower at Alpine, NJ in on 42.8 MC in

> 2005, and is preserved here:

> <https://archive.org/details/armstrong-commemorative-broadcast>

>

> Check out audio files 5empire1.wav and 6empire2.wav.

>

> More info on WA2XMN here: <http://www.wa2xmnet.net/>

>

> Regards,

> Al

>

> On 4/15/2014 9:38 PM, WQ9E at btsnetworks.net wrote:

>> I agree with Bill, both the book and the documentary are excellent.

>> I generally prefer books to movies and documentaries but with Ken

>> Burns the video story telling is excellent. His work is the

>> antithesis of the reality crap that is the mainstay of television today.

>>

>> Rodger WQ9E

>>

>>

>

From arc5 at ix.netcom.com Wed Apr 16 12:01:33 2014

From: arc5 at ix.netcom.com (David Stinson)

Date: Wed, 16 Apr 2014 11:01:33 -0500

Subject: [BoatAnchors] [Boatanchors] Short Wave Broadcast Folks:

In-Reply-To: <A8CD2198895448A2B99ACD9AEF17CB84@JimPC>

References:

<58158DD257F04510B101AF0502391EEC@DaddyPC><C045A70A183C42A1B09BBF463E5841C9@VALUED
20606295><49430f7a2c17425099df11fe2b296d84@BLUPR03MB392.namprd03.prod.outlook.com>
<BAFE166BE3724D219345BD32C06771F7@DaddyPC>
<A8CD2198895448A2B99ACD9AEF17CB84@JimPC>

Message-ID: <1299D8CE10464FAEA07EE40471046D95@DaddyPC>

Jim, that's as good an answer as I've seen.

Thank you, sir.

From arc5 at ix.netcom.com Wed Apr 16 12:08:26 2014

From: arc5 at ix.netcom.com (David Stinson)

Date: Wed, 16 Apr 2014 11:08:26 -0500

Subject: [BoatAnchors] Short Wave Broadcast Folks:

In-Reply-To: <A8CD2198895448A2B99ACD9AEF17CB84@JimPC>

References:

<58158DD257F04510B101AF0502391EEC@DaddyPC><C045A70A183C42A1B09BBF463E5841C9@VALUED
20606295><49430f7a2c17425099df11fe2b296d84@BLUPR03MB392.namprd03.prod.outlook.com>
<BAFE166BE3724D219345BD32C06771F7@DaddyPC>
<A8CD2198895448A2B99ACD9AEF17CB84@JimPC>

Message-ID: <92FE386B8A944FC28420DEEE49C78501@DaddyPC>

What's the "60 Hz to HF" power conversion efficiency?

In other words- How many KiloWatt-hours does it

take to run a 100KW transmitter for an hour?

Anyone know?

From wb6orz at comcast.net Wed Apr 16 01:43:51 2014

From: wb6orz at comcast.net (Les Zwiebel WB6ORZ)

Date: Tue, 15 Apr 2014 22:43:51 -0700

Subject: [BoatAnchors] SX-71 Main and Bandsread Knobs

Message-ID: <02f301cf5936\$d9285980\$8b790c80\$@comcast.net>

Are these fitted with Bristol or Hex Set Screws?

Thanks in advance.

((((73)))

Les

From 1oldlens1 at ix.netcom.com Wed Apr 16 12:22:52 2014
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Wed, 16 Apr 2014 09:22:52 -0700
Subject: [BoatAnchors] [Boatanchors] Empire of the Air
References: <f0039e07c74e41c69152058c6f75ffae@mail.broadtechsolutions.com>
<534E0B27.5020200@ar88.net> <534E9AA6.6070104@charter.net>
Message-ID: <7B151E980C564377B9391656C10E8668@VALUED20606295>

----- Original Message -----

From: "Sandy Blaize" <ebjr37 at charter.net>
To: "Al Klase" <ark at ar88.net>; "Old Tube Radios"
<boatanchors at theporch.com>; "TETRODE List"
<tetrode at googlegroups.com>
Sent: Wednesday, April 16, 2014 7:58 AM
Subject: Re: [BoatAnchors] [Boatanchors] Empire of the Air

>I have read thru this book probably no less than 5-6 times!
>Extremely interesting and about three very remarkable
>people basically different in their own ways. If Armstrong
>hadn't leaped out of the hotel window, he would have been
>able to see the late blossoming of his "wide band FM" go
>wild. It would have been a vindication of Crosby telling
>him his system was "not mathematically possible and it
>would fail".

Not Murray Crosby, who was a prolific inventor of FM
circuits himself but John Carson at Bell Labs. I am not
sure what Carson wrote and I am not sure he was not
mis-quoted. I have somewhere the citation to Carson's paper.
It was probably re-printed in the Bell System Technical
Journal but I think appeared elsewhere first.

--

Richard Knoppow
Los Angeles
WB6KBL
dickburk at ix.netcom.com

From beckrep at citlink.net Wed Apr 16 14:41:00 2014
From: beckrep at citlink.net (Paul Beckwith)
Date: Wed, 16 Apr 2014 11:41:00 -0700
Subject: [BoatAnchors] [Boatanchors] Short Wave Broadcast Folks:

In-Reply-To: <BAFE166BE3724D219345BD32C06771F7@DaddyPC>
References: <58158DD257F04510B101AF0502391EEC@DaddyPC>
<C045A70A183C42A1B09BBF463E5841C9@VALUED20606295>
<49430f7a2c17425099df11fe2b296d84@BLUPR03MB392.namprd03.prod.outlook.com>
<BAFE166BE3724D219345BD32C06771F7@DaddyPC>
Message-ID: <mailman.2522.1397673638.241.boatanchors@theporch.com>

At one time, some of the SWBC transmitters had sub-carriers that transmitted coded information to their various agents around the world. Don't know if that technique is still in use.

73's de Paul K2LMQ

At 04:54 AM 4/16/2014, David Stinson wrote:
>That's all good, but I still don't understand how they pay for it
>all. Those "deep pockets" would need to
>be deeper than the Titanic to run 4-500 KW worth of SWBC stations
>and staff 24/7/365, and they don't have a lot of "old lady" audience
>to send-in their "widow's mite," like the tele-vangelist and cable preachers.
>There's something else besides that at work here.
>
>Dave S.

From nf6x at nf6x.net Wed Apr 16 14:54:49 2014
From: nf6x at nf6x.net (Mark J. Blair)
Date: Wed, 16 Apr 2014 11:54:49 -0700
Subject: [BoatAnchors] [Boatanchors] Short Wave Broadcast Folks:
In-Reply-To: <95D19616-85FA-4739-9904-178670CDCE2D@nf6x.net>
References:
<58158DD257F04510B101AF0502391EEC@DaddyPC><C045A70A183C42A1B09BBF463E5841C9@VALUED20606295><49430f7a2c17425099df11fe2b296d84@BLUPR03MB392.namprd03.prod.outlook.com>
<BAFE166BE3724D219345BD32C06771F7@DaddyPC>
<A8CD2198895448A2B99ACD9AEF17CB84@JimPC>
<1299D8CE10464FAEA07EE40471046D95@DaddyPC>
<95D19616-85FA-4739-9904-178670CDCE2D@nf6x.net>
Message-ID: <CAAF9AE2-3907-4DDF-A93D-F7BB44603172@nf6x.net>

On Apr 16, 2014, at 11:23 , Mark J. Blair <nf6x at nf6x.net> wrote:
> On Apr 16, 2014, at 09:01 , David Stinson <arc5 at ix.netcom.com> wrote:
>> Jim, that's as good an answer as I've seen.
>> Thank you, sir.
>
> This conversation interests me, but I'm only seeing David's side of it on the list.

I meant to reply on-list... :)

--

Mark J. Blair, NF6X <nf6x at nf6x.net>
<http://www.nf6x.net/>

From ranickel at comcast.net Wed Apr 16 15:17:58 2014
From: ranickel at comcast.net (Robert Nickels)
Date: Wed, 16 Apr 2014 14:17:58 -0500
Subject: [BoatAnchors] [Boatanchors] Short Wave Broadcast Folks:
In-Reply-To: <CAAF9AE2-3907-4DDF-A93D-F7BB44603172@nf6x.net>
References:
<58158DD257F04510B101AF0502391EEC@DaddyPC><C045A70A183C42A1B09BBF463E5841C9@VALUED
20606295><49430f7a2c17425099df11fe2b296d84@BLUPR03MB392.namprd03.prod.outlook.com>
<BAFE166BE3724D219345BD32C06771F7@DaddyPC>
<A8CD2198895448A2B99ACD9AEF17CB84@JimPC>
<1299D8CE10464FAEA07EE40471046D95@DaddyPC>
<95D19616-85FA-4739-9904-178670CDCE2D@nf6x.net>
<CAAF9AE2-3907-4DDF-A93D-F7BB44603172@nf6x.net>
Message-ID: <534ED766.8040904@comcast.net>

I can't explain how Bro. Stair stays on the air, other than concluding that his listeners follow the commands of the late great Dr. Gene Scott to "get on that telephone!".

Closely related, a friend recently made me aware of this link to a very nice compilation of airchecks and interval signals from many international shortwave broadcasters from the "golden age of shortwave", and I thought others would find it of interest too:

http://www.youtube.com/watch?v=sf_UzdvyKQ

The images are neat to see as well as the nostalgic audio, but I'd bet the quality of these recordings is somewhat better than most of us remember hearing these stations on our old two-dial Hallicrafters!

73, Bob W9RAN

From mike at oldaudio.net Wed Apr 16 15:49:02 2014
From: mike at oldaudio.net (Mike Durff)

Date: Wed, 16 Apr 2014 12:49:02 -0700 (PDT)
Subject: [BoatAnchors] Bell System technical journal 1922-1983
Message-ID: <1397677742.94668.YahooMailNeo@web5703.biz.mail.ne1.yahoo.com>

Bell System technical journal 1922-1983 available for free here: ? ? ? <http://www3.alcatel-lucent.com/bstj/>

From 1oldlens1 at ix.netcom.com Wed Apr 16 12:56:43 2014
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Wed, 16 Apr 2014 09:56:43 -0700
Subject: [BoatAnchors] [Boatanchors] Short Wave Broadcast Folks:
References:
<58158DD257F04510B101AF0502391EEC@DaddyPC><C045A70A183C42A1B09BBF463E5841C9@VALUED20606295><49430f7a2c17425099df11fe2b296d84@BLUPR03MB392.namprd03.prod.outlook.com>
<BAFE166BE3724D219345BD32C06771F7@DaddyPC><A8CD2198895448A2B99ACD9AEF17CB84@JimPC>
<92FE386B8A944FC28420DEEE49C78501@DaddyPC>
Message-ID: <2BF6593DC3B0447F84BF248FC71A566C@VALUED20606295>

----- Original Message -----

From: "David Stinson" <arc5 at ix.netcom.com>
To: <boatanchors at mailman.qth.net>
Cc: <boatanchors at theporch.com>
Sent: Wednesday, April 16, 2014 9:08 AM
Subject: Re: [Boatanchors] Short Wave Broadcast Folks:

> What's the "60 Hz to HF" power conversion efficiency?
> In other words- How many KiloWatt-hours does it take to
> run a 100KW transmitter for an hour?
> Anyone know?
>

This is in the specs of all commercial transmitters.
The overall efficiency is probably the most important factor in operating cost. The increase in efficiency from the first broadcast transmitters has been enormous. The first transmitters were made up of a series of linear amplifiers running about Class-B with a low level exciter usually grid modulated. The original RCA Model B, which was employed at many early 50KW stations drew an average line demand of something like 250,000 watts, perhaps more. I don't know if this included cooling costs. These were water cooled requiring a system of pumps and radiators. The next

improvement was the use of plate modulation with Class-C RF amplifiers and push-pull Class-B modulators. The improvement in efficiency was considerable. An RCA 50KW transmitter drew an average of about 150KW. Average because the line demand varies with the modulation. In 1935 Western Electric and Bell Labs announced a new "high efficiency" transmitter based on the inventions of William Dougherty. This is a low level modulated linear amplifier but uses a clever circuit to vary its operating condition with the amount of modulation. It uses two tubes connected such that one tube operates alone for the carrier at about saturated Class-B and the other tube is idle. For downward modulation the first tube works as a linear amplifier. For upward modulation the second tube begins to contribute. However, Dougherty used an interesting circuit to change the effective load on both tubes so that at the peak of modulation the "carrier" tube is supplying double the power it does under carrier conditions and the second or "peak" tube also supplies about double carrier power resulting of a peak of four times carrier, which is what is needed. Now, the problem with a Class-B linear is that it must be able to handle the full power at 100% modulation. That results in very low efficiency for the carrier only, no more than about 33 percent. On an overall or "all day" basis with normal broadcast modulation the efficiency is not much more than this. The Dougherty amp however, maintains about the same efficiency regardless of the amount of modulation so has an overall efficiency of about 66%. This is comparable to a plate modulated transmitter but has the advantage of not needing a modulation transformer. The early WE transmitters were hard to tune and could have fairly high distortion but the circuit was modified later both by Dougherty and by James Weldon, the founder of Continental Electronics. Continental is still building Dougherty type transmitters but they have much better operating characteristics. Another common high-efficiency transmitter is the pulse modulated type originated at Gates Radio, now part of Harris. This is a so-called Class-D transmitter. It is essentially plate modulated with all RF stages running well into Class-D. The plate supply to the final amplifier is pulse modulated in such a way that the pulses are integrated in the final tank and produce AM there. The Harris transmitters have very good efficiency, approaching Class-C and very low distortion. Another saving in both types is cooling. Since the plate (or collector in solid state amps) is dissipating less energy the cooling can be less and the cost of cooling is reduced. The line demand of a modern Dougherty or pulse type transmitter is perhaps no more than

25% greater than its output. Both types have been adapted to HF use but the pulse type requires very simple tuning, on the order of a Class-C telegraph transmitter so they are very suitable for frequency agile transmitters.

Some time around the 1960s RCA decided to use a very old idea called Cheirex (I've misspelled this I am sure) modulation. It sounds like a good idea at first but doesn't work very well. Cheirex put two phase modulated transmitting chains together such that the two sides were each phase modulated in opposite directions and the output combined at the final tank. The fixed phase was set to produce the carrier and the phase varied with the modulation. The problem is that the system is not linear although at first blush it would seem to be. Its also not very efficient since both sides are running full power all the time. RCA called this the Ampliphase transmitter and it was supposed to be a high-efficiency and high fidelity unit. It turned out to be neither. RCA jumped through hoops to correct the distortion inherent in the system. The 50KW Ampliphase had something like 30 tubes in it compared to a Continental Dougherty type with 9 tubes and better performance. Although some short wave Ampliphase transmitters were built they were not at all satisfactory since to maintain any kind of phase relationship through them required a complex tuning procedure. MW broadcast stations unfortunate enough to have bought them found they often sounded very bad on the air and were less efficient than either the Continental or Gates type or, for that matter a conventional plate modulated transmitter.

The Top-40 and later programming spelled the end of a lot of plate modulated transmitters because of the enormous amount of processing these stations used. They put the modulation transformers under a sort of strain never envisioned by the designers and many failed. The Dougherty and pulse type transmitters would run at 100% modulation all day without problems so a lot of still serviceable plate modulated transmitters were replaced.

Enough of this.

--

Richard Knoppow

Los Angeles

WB6KBL

dickburk at ix.netcom.com

From 1oldlens1 at ix.netcom.com Wed Apr 16 16:22:59 2014
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Wed, 16 Apr 2014 13:22:59 -0700
Subject: [BoatAnchors] Bell System technical journal 1922-1983
References: <1397677742.94668.YahooMailNeo@web5703.biz.mail.ne1.yahoo.com>
Message-ID: <9CA0ECC4211F4548826557E25A552863@VALUED20606295>

----- Original Message -----

From: "Mike Durff" <mike at oldaudio.net>
To: <boatanchors at theporch.com>
Sent: Wednesday, April 16, 2014 12:49 PM
Subject: [BoatAnchors] Bell System technical journal
1922-1983

Bell System technical journal 1922-1983 available for free
here: <http://www3.alcatel-lucent.com/bstj/>

You will also find a great deal of historical material
including a selection of the Bell Labs Record at
<http://www.americanradiohistory.com/>

Included are many editions of the _Radio Annual_ and
other annual and news journals aimed at the broadcast
industry. Also a few old RCA broadcast catalogues. An
amazing collection of stuff and increasing every day.

BTW note the quote from Lee DeForest at the very top of
the home page.

--

Richard Knoppow
Los Angeles
WB6KBL
dickburk at ix.netcom.com

From 1oldlens1 at ix.netcom.com Wed Apr 16 16:40:54 2014
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Wed, 16 Apr 2014 13:40:54 -0700
Subject: [BoatAnchors] Bell System technical journal 1922-1983
References: <1397677742.94668.YahooMailNeo@web5703.biz.mail.ne1.yahoo.com>
Message-ID: <38AF954BBEBB4C1D8E1BC044AE4C102D@VALUED20606295>

----- Original Message -----

From: "Mike Durff" <mike at oldaudio.net>
To: <boatanchors at theporch.com>
Sent: Wednesday, April 16, 2014 12:49 PM
Subject: [BoatAnchors] Bell System technical journal
1922-1983

Bell System technical journal 1922-1983 available for free
here: <http://www3.alcatel-lucent.com/bstj/>

I just looked at
<http://www.americanradiohistory.com/>

and found that there is a small collection of the _RCA
Review_ there with the promise of more. The _Review_ was
RCA's equivalent of the BSTJ. Its interesting that both
Bell Labs and RCA Labs chose to create internal
peer-reviewed house organs while Kodak Research Labs decided
to publish its scientific and technical papers in
established journals. While both the Bell and RCA
publications are considered quite respectable Kodak gained
immediate credibility by using established publications of
the highest respectability. Much of the material in the BSTJ
and Review were also printed in other journals such as the
JSMPE and IRE (predecessor to the IEEE) and other well known
journals.

--

Richard Knoppow
Los Angeles
WB6KBL
dickburk at ix.netcom.com

From 4cx250b at miamioh.edu Wed Apr 16 13:25:11 2014
From: 4cx250b at miamioh.edu (Jim Garland)
Date: Wed, 16 Apr 2014 11:25:11 -0600
Subject: [BoatAnchors] Short Wave Broadcast Folks:

In-Reply-To: <92FE386B8A944FC28420DEEE49C78501@DaddyPC>

References:

<58158DD257F04510B101AF0502391EEC@DaddyPC><C045A70A183C42A1B09BBF463E5841C9@VALUED
20606295><49430f7a2c17425099df11fe2b296d84@BLUPR03MB392.namprd03.prod.outlook.com>
<BAFE166BE3724D219345BD32C06771F7@DaddyPC>
<A8CD2198895448A2B99ACD9AEF17CB84@JimPC>
<92FE386B8A944FC28420DEEE49C78501@DaddyPC>

Message-ID: <025501cf5998\$d2f66d60\$78e34820@miamioh.edu>

Dave,

Power is independent of frequency, so 100kW at, e.g., 1MHz, is the same as 100kW at 60Hz. To answer your question explicitly, if a 100kW transmitter is roughly 60% efficient, then it takes 167kW to produce 100kW of RF output power. In one hour, that corresponds to 167 kilowatt-hours. At a cost of \$0.10 per KW, that translates to an operating cost for electricity of \$16.70 per hour, or about \$400 per day, or about \$146,000 for a year, assuming 24/7 operation. That's just the raw electricity cost and does not include maintenance, labor, other utilities, building rental, insurance, taxes, or amortization of the facility capital expense.

73,

Jim W8ZR

> -----Original Message-----

> From: BoatAnchors [mailto:boatanchors-bounces at theporch.com] On Behalf Of David

> Stinson

> Sent: Wednesday, April 16, 2014 10:08 AM

> To: boatanchors at mailman.qth.net

> Cc: boatanchors at theporch.com

> Subject: Re: [BoatAnchors] Short Wave Broadcast Folks:

>

> What's the "60 Hz to HF" power conversion efficiency?

> In other words- How many KiloWatt-hours does it

> take to run a 100KW transmitter for an hour?

> Anyone know?

>

>

> -----
> BoatAnchors mailing list

> BoatAnchors at theporch.com

> <https://minime.theporch.com/mailman/listinfo/boatanchors>

From mike at oldaudio.net Thu Apr 17 10:37:22 2014

From: mike at oldaudio.net (Mike Durff)

Date: Thu, 17 Apr 2014 07:37:22 -0700 (PDT)

Subject: [BoatAnchors] Short Wave Broadcast Folks

Message-ID: <1397745442.37665.YahooMailNeo@web5701.biz.mail.ne1.yahoo.com>

Seems like I read somewhere, or possibly saw a You Tube video on some of the old AM "border blasters" being shut down due to the high cost of, unreliable, local commercial power. I'm sure transmitter maintenance was a large part of that decision...

From listown at nanniandjack.com Thu Apr 17 10:44:44 2014
From: listown at nanniandjack.com (Jack G F Hill)
Date: Thu, 17 Apr 2014 09:44:44 -0500
Subject: [BoatAnchors] Potential Issue impacting ALL BoatAnchors subscribers
Message-ID: <534FE8DC.3070401@nanniandjack.com>

Gang-

There is an issue with mail lists, such as our beloved BoatAnchors list that effects several members right now, and may impact other members sooner or later.

In an effort to control SPAM and "Phishing", some email providers (e.g., yahoo.com), have implemented a policy wherein email posted to the list by a member of the list but with an email address from one of the offending providers will bounce to ANY and ALL members with email addresses from that provider domain, and with automatic bounce processing in place, that means some members may be automatically unsubscribed without the member intending to...

Perhaps an example would help:
user at yahoo.com sends a post to boatanchors at theporch.com
The mailing list software processes the post and sends it out to all list members, including all members with a yahoo.com address
HOWEVER, since the list posting has a "From:" address of user at yahoo.com, but comes from theporch.com, the email will bounce for each yahoo.com member, creating the potential for members not only not seeing the message, but also being unsubscribed from the BoatAnchors list.

As we work through this, I have set all members from the offending domains to "Moderate" so we can implement a manual work-around... as a precautionary warning, one solution may make reading list postings on an iPhone "difficult" (current iOS implementation does NOT do attachments well)... and something you can do if your domain is held for moderation is to get a gmail address or arrl.net address, and change where your list email goes to and comes from. If this situation impacts you, you should also complain (loudly) to your email provider.

Sorry about the administrivia post, but since lots of folks are effected, this was much easier than individual emails to the large number of folks impacted...

--

Jack Hill, W4KH - BoatAnchors Listowner/Archiver
listown at nanniandjack.com
"Plus ca change, plus c'est la meme chose"
"Il n'y a que les idiots qui ne changent jamais d'idee"

From richardlo at admin.athabascau.ca Thu Apr 17 18:05:38 2014
From: richardlo at admin.athabascau.ca (Richard Loken)
Date: Thu, 17 Apr 2014 16:05:38 -0600 (MDT)
Subject: [BoatAnchors] [Boatanchors] Short Wave Broadcast Folks:
In-Reply-To: <2BF6593DC3B0447F84BF248FC71A566C@VALUED20606295>
Message-ID: <Pine.PMDF.4.44L.1404171552160.1090-100000@admin.athabascau.ca>

On Wed, 16 Apr 2014, Richard Knoppow wrote:

> varies with the modulation. In 1935 Western Electric and
> Bell Labs announced a new "high efficiency" transmitter
> based on the inventions of William Dougherty. This is a low
> level modulated linear amplifier but uses a clever circuit
> to vary its operating condition with the amount of
> modulation. It uses two tubes connected such that one tube

The Canadian Broadcasting Corporation installed an RCA 50D (50KW) at CBK 540KHz in Watrous, Saskatchewan in 1937. I visited the transmitter site in 1972 and was shown around by the two old farts running the place. The engineers told me that the 50D was a Dougherty transmitter - it was water cooled and ran two tall thin final tubes that were about a metre long and made of a lighter material than the air cooled tubes that I was/am familiar with. The front panel, all 10 or more metres of it, was painted bright RCA red and it made hardly any noise except for a continuous 60Hz hum and a sympathetic resonant vibration of some sort when a loud raunchy record was played.

I did broadcast engineering myself for 10 years after that - mostly with RCA television transmitters but they were a dark grey colour or later a light blue, lovely machines but none of them had the charisma of the 50D and they had all that fan noise.

--

Richard Loken VE6BSV, Unix System Administrator	:	"Anybody can be a father
Athabasca University	:	but you have to earn
Athabasca, Alberta Canada	:	the title of 'daddy'"
** richardlo at admin.athabascau.ca **	:	- Lynn Johnston

From anchor at ec.rr.com Fri Apr 18 09:42:52 2014
From: anchor at ec.rr.com (Al Parker)

Date: Fri, 18 Apr 2014 09:42:52 -0400
Subject: [BoatAnchors] Raleigh, NC fest Sat.
Message-ID: <53512BDC.6070703@ec.rr.com>

Hi folks,

I don't usually post this sort of msg, but this time I have some interesting items to be sold at RARSfest Sat.

A local friend asked me to take some vintage test eqpt of his, and he's a "motivated seller".

1. Rohde & Schwarz Zg Diagraph Smith Chart Plotter 30 - 300 - 420 Mhz with some extras - fuses, coax adapters, etc.
 2. Rohde & Schwarz VHF Mess Sender (signal generator) 25 - 480 Mhz, mates with the Diagraph, puts out 500 mw into 50 ohms (I saw it do that ystdy)
 3. Tektronix 130 LC Meter
 4. Tektronix S 30 Delta Standards for the LC Meter
 5. Logarithmic (in decibels) voltmeter/low level amp - audio freqs,
 6. 3 old Heath VTVM's
- prices range from \$5 to \$75, take both Rohde & Schwarz for \$100 (they're big, solid, heavy)

also, of my own:

1. HRO-60T with 5 coils sets & speaker - \$350
2. Collins R-388, with cabinet. I've been thru it - \$325
3. Drake SSR-1 Wadley Loop rcvr - \$195
4. Drake TR-3, with AC-3, RV-3. I've been thru it - \$225

plus some of my usual edebris

I will unload Fri. abt 3PM, will have cellfone, but don't always hear it (252) 259-6431 don't leave a msg, just try again, DON'T call between 5PM Fri. and 8AM Sat. I'll check emails tonite.

Hopefully I will be located together with several of the Triangle Area BA guys - John Poulton, Nick England, Todd Bigelow, Steve Tell, John Brewer, and others - maybe Herman Cone, Alan Fryer, et al.

Hope to CU there.

73,

Al, W8UT
www.boatanchors.org
www.hammarlund.info

"There is nothing -- absolutely nothing -- half so much worth doing as simply messing about in boats"
Ratty, to Mole

From spr at earthlink.net Thu Apr 17 21:23:00 2014

From: spr at earthlink.net (Scott Robinson)
Date: Thu, 17 Apr 2014 18:23:00 -0700
Subject: [BoatAnchors] [Boatanchors] Short Wave Broadcast Folks:
In-Reply-To: <Pine.PMDF.4.44L.1404171552160.1090-100000@admin.athabascau.ca>
References: <Pine.PMDF.4.44L.1404171552160.1090-100000@admin.athabascau.ca>
Message-ID: <53507E74.6040209@earthlink.net>

Folks,

I was told by the transmitter engineer at KGO (50 kW, 810 kHz) in San Francisco that their newest transmitter has a conversion efficiency from AC mains to RF out of about 90%. It can't be getting rid of much heat, since it occupies only one oversize rack, probably several feet deep. It's all done by switching methods, of course.

Peace,

Scott

From navy.radio at gmail.com Fri Apr 18 14:24:06 2014
From: navy.radio at gmail.com (Nick England)
Date: Fri, 18 Apr 2014 14:24:06 -0400
Subject: [BoatAnchors] vintage ham radio article in Sports Illustrated
Message-ID: <CAB55hNfxgSAoAFW6Mxx=b10W=Rv=Bns0Ft2ZJ1H3x+_p0=xSzg@mail.gmail.com>

No nothing to do with swimsuits -- from the June 30, 1958 issue

<http://sportsillustrated.cnn.com/vault/article/magazine/MAG1002473/1/index.htm>

"...the oddest, toughest and by any standards the most international of all sporting competitions"

Cheers,
Nick K4NYW
www.navy-radio.com

From navy.radio at gmail.com Sat Apr 19 20:22:53 2014
From: navy.radio at gmail.com (Nick England)
Date: Sat, 19 Apr 2014 20:22:53 -0400
Subject: [BoatAnchors] Hamfest photos - Charlotte & Raleigh NC
Message-ID: <CAB55hNfokL5rqtBADeJnWDi+4bUiz9m-DtkPr35fa7fLZyET2g@mail.gmail.com>

A pretty good assortment of BA gear at both events -
- Charlotte NC March 2014
<http://www.virhistory.com/ham/clt-14.htm>
- Raleigh NC April 2014

<http://www.virhistory.com/ham/rars-14.htm>

Cheers,
Nick England K4NYW
www.navy-radio.com

From arc5 at ix.netcom.com Mon Apr 21 09:05:19 2014
From: arc5 at ix.netcom.com (David Stinson)
Date: Mon, 21 Apr 2014 08:05:19 -0500
Subject: [BoatAnchors] More and More "Gassy" Tubes
Message-ID: <42B660C775334523B670062C6D0DE340@DaddyPC>

I'm starting to see more and more "gassy" and shorted tubes lately. Even the venerable 1625.
Not a lot- probably one out of 12-15, but that's way more than I saw a decade ago.
You think these near-century-old envelope seals have a "shelf life?"

From arc5 at ix.netcom.com Mon Apr 21 10:57:22 2014
From: arc5 at ix.netcom.com (David Stinson)
Date: Mon, 21 Apr 2014 09:57:22 -0500
Subject: [BoatAnchors] "Blue Glow" mystery.
Message-ID: <BD102246B0734DB18F59D5B7BC2A530F@DaddyPC>

Here's a mystery for you.

A VT-25 in a Power Amplifier stage.
Key-up idle.

$E_p = 500V$.
 $E_g = -110V$ (cut-off)
Cathodes at ground.
No plate current, of course.

Yet.... on the glass envelope is a small blue glow!
And it disappears at key-down...

Ghosts? Goblins??

From gumbear at pacbell.net Mon Apr 21 23:32:53 2014
From: gumbear at pacbell.net (Arden Allen)
Date: Mon, 21 Apr 2014 20:32:53 -0700
Subject: [BoatAnchors] [Boatanchors] Short Wave Broadcast Folks:
In-Reply-To: <534ED766.8040904@comcast.net>

References:

<58158DD257F04510B101AF0502391EEC@DaddyPC><C045A70A183C42A1B09BBF463E5841C9@VALUED
20606295><49430f7a2c17425099df11fe2b296d84@BLUPR03MB392.namprd03.prod.outlook.com>
<BAFE166BE3724D219345BD32C06771F7@DaddyPC>
<A8CD2198895448A2B99ACD9AEF17CB84@JimPC>
<1299D8CE10464FAEA07EE40471046D95@DaddyPC>
<95D19616-85FA-4739-9904-178670CDCE2D@nf6x.net>
<CAAF9AE2-3907-4DDF-A93D-F7BB44603172@nf6x.net>
<534ED766.8040904@comcast.net>

Message-ID: <8565BAD664794770A8CD86FF1433EB6C@KB6NAX>

Thanks, Bob. This is a fabulous compilation. I heard many of the major stations in my SWL'ing days. The mystery and romance is gone now. My favorite ID tune was Radio Japan's.

> http://www.youtube.com/watch?v=sf_UzdvTyKQ

Arden Allen

KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)

From listown at nanniandjack.com Tue Apr 22 20:24:56 2014

From: listown at nanniandjack.com (List Manager)

Date: Tue, 22 Apr 2014 18:24:56 -0600

Subject: [BoatAnchors] Empire of the Air

Message-ID: <b9dced34a235c8d5efc47aa403ef599d@nanniandjack.com>

On Monday 21 April 2014, John Sehring, WB0EQ (wb0eq at yahoo.com) posted the following... it is coming from my address to the list to circumvent the problem I described the other day about some domains rejecting email which in turn rejects users and eventually causes unintended unsubscribes... please reply to John AND the list:

John Carson (of Bell Labs) was comparing ordinary AM with FM of similar bandwidth, around 13 kHz and about 5 kHz of FM deviation.?

That is narrow band FM, and yes, it is inferior to AM under ionospheric (F-layer) propagation conditions found on MF and HF, i.e. with the usual large amount of multipath, which is what causes most (but not all) HF fading.?

Carson was actually correct with his work in 1922.? What Bell was looking at was to use FM in their telephone network.

The result on NBFM is what's called "phase distortion" and on AM called "selective fading".? Exactly the same propagation effect but on two different modulation schemes.? This former is generally much worse than the latter, all other things being equal.

It was Armstrong's genius to recognize that huge advantages for FM could be had over AM when using really wide band FM, say, 75 kHz deviation giving a bandwidth of about 260 kHz.

That wide of a signal would have to be placed on VHF where there was space for it. Armstrong was first on at about 42 to 50 MHz, later forced by the FCC to go to 88 to 108 MHz, with his wideband FM system.? There is of course hardly any non-groundwave propagation on those frequency bands so that problem goes away.

However, multipath generated by signal reflection from earth-bound structures is still a big problem, esp. in moving car FM receivers.? Turns out that multipath susceptibility is higher for greater deviations, like 75 kHz.? You can easily hear it as picket fencing on FM broadcast reception.? The analog TV analog is ghosting.

WBFM radio designers have been fighting this with various electronic tricks (at AF and IF) for decades.

In 1952, Armstrong loaned the use of his 325 ft. tall tower in Alpine NJ to MIT researchers (Arguimbau, who later worked at McIntosh Labs--famous for their FM tuners) to attempt trans-Atlantic WBFM transmission on 26 MHz from the US to Britain.

Even though using special WBFM receivers having extremely good capture ratio (under 1 dB!) and plenty of power (kWs), the test was not successful--too much multipath and resultant phase distortion.? There being typically two slightly difference transmission paths via F-layer propagation, which naturally had different path delays, the receiver would be abruptly captured by either one or the other of the signals.?

Degree of capture was of course very good? and complete (thanks to receiver's excellent capture ratio)? but the constant captures and re-captures caused huge thumps in the output of the FM detector.? This problem was never fixed as it is intrinsic to FM.

The design of this receiver showed up later, e.g. Marantz model 10 FM tuner.? Basically it consisted of a series of germanium diode/vacuum tube limiter stages, four or more being typical.? I think that later tuners by Dick Sequerra used same.

BTW, I grew up just a few miles from Armstrong's tower.? I could see the tower and its blinking red lights of it from my bedroom window.? I remember being held by my mother at that window and asking what the tower was for.

BTW, Bell did use a tremendous amount of FM in its telephone and data networks, but that was years after the 1920s.

I find this all a great story.

>? ? Not Murray Crosby, who was a prolific inventor of FM
>circuits himself but John Carson at Bell Labs.? I am not
>sure what Carson wrote and I am not sure he was not
>mis-quoted. I have somewhere the citation to Carson's paper.
>It was probably re-printed in the Bell System Technical
>Journal but I think appeared elsewhere first.

--John Sehring - VE6EQR-WB0EQ -- nr Calgary, Alberta, Canada

From gumbear at pacbell.net Tue Apr 22 23:04:03 2014
From: gumbear at pacbell.net (Arden Allen)
Date: Tue, 22 Apr 2014 20:04:03 -0700
Subject: [BoatAnchors] Empire of the Air
In-Reply-To: <b9dced34a235c8d5efc47aa403ef599d@nanniandjack.com>
References: <b9dced34a235c8d5efc47aa403ef599d@nanniandjack.com>
Message-ID: <C94FCC007D254DF483A29E1A5BA90424@KB6NAX>

The best solution to these self interference problems was single sideband suppressed carrier (SSBSC?). Collins came late to the game but the Air Force, Navy and airlines benefitted immensely from SSB. After modifying my SP-600 by putting in a low distortion heterodyne detector (as differentiated from a product detector) I enjoyed monitoring over ocean airline traffic. Listening to traffic controllers around the Pacific amply demonstrated the superiority of SSB. Voices were free of selective fading distortion and as long as a signal was above the electrical storm noise intelligibility was excellent.

There's a reason SSB works so well. There's no virtually frequency coherence in an emitted signal, just the randomness of what's contained in a sideband. No carrier cancelled by an alternate phase version of itself in AM selective fading and no grinding distortion caused by the limitless mixing products of carrier dependent multipath FM. But alas, as ham radio knows, no modulation system can withstand the effects of multiple stations on top of each other.

Arden Allen
KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)

-----Original Message-----

From: List Manager
Sent: Tuesday, April 22, 2014 5:24 PM
To: boatanchors at theporch.com
Subject: [BoatAnchors] Empire of the Air

> John Carson (of Bell Labs) was comparing ordinary AM with FM of similar bandwidth, around 13 kHz and about 5 kHz of FM deviation.?

From thompson at mindspring.com Wed Apr 23 00:21:11 2014
From: thompson at mindspring.com (David Thompson)
Date: Wed, 23 Apr 2014 00:21:11 -0400
Subject: [BoatAnchors] Empire of the Air
References: <b9dced34a235c8d5efc47aa403ef599d@nanniandjack.com>
Message-ID: <03eb01cf5eab\$f4a29cf0\$8f5d4d0c@yourxb2x7j77gn>

Only a few of us had the experience of a hot 10 meter band open to Europe with 28.1 to 28.5 being filled with mostly AM signals but a few that ran NBFM did stand out. I used to work OZ1AD and on my receiver he sounded like a somewhat distorted AM signal but virtually 100% readable in the clear. Seems most who ran NBFM in the mid to late 1950's were in Western Europe.

I agree with Arden Allen that SSB had several attributes that made it more effective. First, there was no carrier (except for my SB-10), second SSB only took up 3 kcs, and finally you could read very weak signals 100% if there was no QRM. Roundtables of SSB stations over several closeby states was possible on what we now call backscatter. I remember trying to work a Dxpedition on 20 in the Central Pacific. I called for a couple of hours and they faded out. Over 3 hours later the station was working other areas of the world and he stood by for weak signals. I worked him right away and exchanged 5 by 3 reports. This happened several times in the 1960's on SSB and I hear it happened on CW, too.

I really like AM and put together a nice 500 watt AM rig running a 4-400 modulated by a pair of 811A's. I have WAS, WAC, and 261 DXCC entities (formerly countries). I have added several more by getting some of the rare ones to try AM. I finally put my SB-10 on the air driving the 4-400 in AB1 (2 watts) in December 1959. By 1963 I was over 90% SSB on voice. I remember Don Merten K2AAA (Eldico) ran SSB in 1957 in the ARRL Sweepstakes. He proved that running SSB he could surpass the top

CW Contact totals of men like W4KFC or W9IOP. Of course some AMers refused to work him but he made his point. My 1960 Station was on the cover of the April 1997 Electric Radio. I used every trick I could to make my 5 land signal cut through the East Coast. I used negative cycle loading and clipping and audio filters to limit the audio to 250 to 3000 cps. I found that incorporating toroids in the SB-10 I could adapt the audio filters to SSB nicely. No HI FI audio here.

I have not made a extensive study of American Ham gear manufacturers but I find only Hallicrafters made an attempt to sell a NBFM transmitter. Several made NBFM adapters for receive. I found that my Hammarlund HQ-110 copied NBFM OK you just had to get used to tuning them in.

Sorry for the remembrance of my Empire on the air...

73 Dave K4JRB formerly K5MDX

From 1oldlens1 at ix.netcom.com Tue Apr 22 23:19:44 2014
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Tue, 22 Apr 2014 20:19:44 -0700
Subject: [BoatAnchors] Empire of the Air
References: <b9dced34a235c8d5efc47aa403ef599d@nanniandjack.com>
Message-ID: <578FB173CB6B41749C6487226836AD70@VALUED20606295>

----- Original Message -----

From: "List Manager" <listtown at nanniandjack.com>
To: <boatanchors at theporch.com>
Sent: Tuesday, April 22, 2014 5:24 PM
Subject: [BoatAnchors] Empire of the Air

J.R. Carson's paper on FM is

a.. "Notes on the Theory of Modulation", Proceedings of the Institute of Radio Engineers, volume 10, issue 1, February 1922, pages 57-64.

a.. I thought this had been reprinted in the BSTJ but could not find it.

a.. There is a good short article on him on Wikipedia.

a.. Carson is probably best known for developing a practical system of single sideband for use in carrier

telephony. This was later adopted for the AT&T transatlantic radio-telephone circuits.

--

Richard Knoppow
Los Angeles
WB6KBL
dickburk at ix.netcom.com

From 1oldlens1 at ix.netcom.com Tue Apr 22 23:34:14 2014
From: 1oldlens1 at ix.netcom.com (Richard Knoppow)
Date: Tue, 22 Apr 2014 20:34:14 -0700
Subject: [BoatAnchors] Empire of the Air
References: <b9dced34a235c8d5efc47aa403ef599d@nanniandjack.com>
<C94FCC007D254DF483A29E1A5BA90424@KB6NAX>
Message-ID: <DEBF5AD73F4545C6BC8DCB1DB71BAC69@VALUED20606295>

----- Original Message -----

From: "Arden Allen" <gumbear at pacbell.net>
To: "List Manager" <listown at nanniandjack.com>;
<boatanchors at theporch.com>
Sent: Tuesday, April 22, 2014 8:04 PM
Subject: Re: [BoatAnchors] Empire of the Air

> The best solution to these self interference problems was
> single sideband suppressed carrier (SSBSC?). Collins came
> late to the game but the Air Force, Navy and airlines
> benefitted immensely from SSB. After modifying my SP-600
> by putting in a low distortion heterodyne detector (as
> differentiated from a product detector) I enjoyed
> monitoring over ocean airline traffic. Listening to
> traffic controllers around the Pacific amply demonstrated
> the superiority of SSB. Voices were free of selective
> fading distortion and as long as a signal was above the
> electrical storm noise intelligibility was excellent.

>

> There's a reason SSB works so well. There's no virtually
> frequency coherence in an emitted signal, just the
> randomness of what's contained in a sideband. No carrier
> cancelled by an alternate phase version of itself in AM
> selective fading and no grinding distortion caused by the
> limitless mixing products of carrier dependent multipath
> FM. But alas, as ham radio knows, no modulation system
> can withstand the effects of multiple stations on top of

> each other.
>
> Arden Allen
> KB6NAX
>

I'm not sure I understand this. double sideband, especially with suppressed carrier and synchronous detection has better resistance to selective fading than SSB because it is a form of frequency diversity. The power advantage is exactly the same because of the coherent addition of the sidebands in the detector.

A conventional AM detector requires the carrier to be present, as a result it is very vulnerable to selective fading which can periodically null out the carrier leaving what amounts to a carrier suppressed signal. This can be partially remedied by using a carrier replacement method at the receiver. Some methods rely on synchronizing to a residual carrier and depend on the stability of the local oscillator to carry it over if the pilot carrier is nulled for a time. The synchronous detector determines the correct position and phase of the missing carrier by comparison of the phases of the receiverd sidebands. This system works only for double sideband with the same modulation on both but not for ISB.

I am also not sure what you mean by a hetrodyne detector as distinguished from a product detector.

--
Richard Knoppow
Los Angeles
WB6KBL
dickburk at ix.netcom.com

From gumbear at pacbell.net Wed Apr 23 20:19:28 2014
From: gumbear at pacbell.net (Arden Allen)
Date: Wed, 23 Apr 2014 17:19:28 -0700
Subject: [BoatAnchors] Empire of the Air
Message-ID: <6BDA8B2C2B62475B8DB557E17F6FF1DD@KB6NAX>

Hi Rich,

>The synchronous detector determines the correct position and phase of the missing carrier by comparison of the phases of the receiverd sidebands.

I'm not sure you meant to word it that way. There is no 'comparison of the phases of the received sidebands,' just the phase locking of the local carrier oscillator to the signal carrier (while present in sufficient amplitude). The actual phase relationship of the locked oscillator with respect to the sideband with SSB is of little importance because of the phase randomness of the sideband. DSB suppressed carrier local carrier oscillator phase accuracy is more important because of the upper and lower sideband constituent's phase relationships.

Synchronous detection, while effective at reducing selective fading distortion, is more of a gimmick, IMO, than a solution due to the difficulty of recovering marginal signals on the ever varying propagation, noise level and interference plagued SW bands. Strong signals and minimally degraded signals don't much benefit from synchronous detection. SSB was the best hope but too late as SW broadcasting was being replaced by satellite and internet streaming.

>This system works only for double sideband with the same
> modulation on both
but not for ISB.

Please clarify.

>I am also not sure what you mean by a hetrodyne detector
as distinguished from a product detector. ...

A "heterodyne" detector, as defined in earlier ARRL handbooks, is a low distortion diode detector circuit with carrier injection for exalted carrier AM or SSB demodulation (you don't much care about distortion when copying CW with a typical BFO circuit). In my circuit I use one of those sand state OP AMP thingies to bias a germanium diode at exactly zero volts at the summing junction. The diode does not get back biased by its rectified output thus virtually eliminating distortion. The carrier DC component at the OP AMP output is removed by capacitive coupling to the audio amp. Less distortion than typical tube product detectors, fits into chassis for reverse-able mod. I can supply a copy of the circuit if you are interested.

Arden Allen
KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)

From spr at earthlink.net Wed Apr 23 11:45:46 2014
From: spr at earthlink.net (Scott Robinson)
Date: Wed, 23 Apr 2014 08:45:46 -0700

Subject: [BoatAnchors] Empire of the Air
In-Reply-To: <DEBF5AD73F4545C6BC8DCB1DB71BAC69@VALUED20606295>
References: <b9dced34a235c8d5efc47aa403ef599d@nanniandjack.com>
<C94FCC007D254DF483A29E1A5BA90424@KB6NAX>
<DEBF5AD73F4545C6BC8DCB1DB71BAC69@VALUED20606295>
Message-ID: <5357E02A.7070108@earthlink.net>

Scott comments:

I am aware of two methods (one easy, one complex) to eliminate or greatly reduce the effects of selective fading.

One is, as described below, a carrier replacement scheme or synchronous detector. Works fine, but fairly complex.

The other, which works not quite so well but does about 80% of the job, is fast attack, slow decay AVC. This is an easy mod to most receivers, too. The idea is that a large part of the fading problem is that just when the fade is at its worst (low carrier, hence low AVC), the receiver turns its gain way up and adds to the distortion, as well as getting unpleasantly loud. With the fast attack, slow decay AVC this doesn't happen. The distortion due to low carrier--same as overmodulating, really--remains but there is a large net improvement.

You could of course turn off the AVC, but in a fading environment it's useful.

Happy listening (and wishing for more and more interesting signals...),

/scott

On 4/22/14 8:34 PM, Richard Knoppow wrote:

>
> A conventional AM detector requires the carrier to be present, as a
> result it is very vulnerable to selective fading which can periodically
> null out the carrier leaving what amounts to a carrier suppressed
> signal. This can be partially remedied by using a carrier replacement
> method at the receiver. Some methods rely on synchronizing to a residual
> carrier and depend on the stability of the local oscillator to carry it
> over if the pilot carrier is nulled for a time. The synchronous detector
> determines the correct position and phase of the missing carrier by
> comparison of the phases of the receiverd sidebands. This system works
> only for double sideband with the same modulation on both but not for ISB.
> I am also not sure what you mean by a hetrodyne detector as
> distinguished from a product detector.
>

From ddillman at igc.org Thu Apr 24 13:54:32 2014
From: ddillman at igc.org (Richard Dillman)
Date: Thu, 24 Apr 2014 10:54:32 -0700 (GMT-07:00)
Subject: [BoatAnchors] Reminder! Join Us For International Marconi Day
Message-ID: <29112204.1398362072425.JavaMail.root@elwamui-norfolk.atl.sa.earthlink.net>

Here's a reminder and an invitation to join us (the Maritime Radio Historical Society) on the air or in person for International Marconi Day 2014.

Date: Saturday 26 April

Time: 1000-1600pdt

Location: Marconi receive site, Marshall, CA (18500 State Highway One - also called Shoreline Highway): <http://tinyurl.com/m6u4bl4>

Full details: Please see our Newsletter No. 44 for photos and more information at: <http://tinyurl.com/lu3dl7t>

We will have a receive and control point set up in the restored Marconi cottage at the Marconi Conference Center, controlling the original KPH transmitters at the Marconi transmit site in Bolinas, CA. There will be two operating positions, one for KSM and one for K6KPH. Vintage equipment will be used throughout.

Got a commercial radiotelegraph ticket? Sit the circuit at KSM and have your license endorsed for commercial operation on HF and MF.

Just want to sling some Morse? Take a seat at the K6KPH operating position, no license required.

Want to join us on the air? K6KPH will guard 7050.0, 14050.0, 18097.5 and 21050.0kc throughout the day. The actual frequencies in service at any particular time will depend on conditions.

Need fore info? Want to set up a schedule? Just drop a line to info at radiomarine.org

We hope to hear you or see you in person.

VY 73,

RD

=====
Richard Dillman, AE-12-446
Chief Operator, Coast Station KSM
Maritime Radio Historical Society
<http://www.radiomarine.org>
=====

From arc5 at ix.netcom.com Sat Apr 26 19:51:34 2014
From: arc5 at ix.netcom.com (David Stinson)
Date: Sat, 26 Apr 2014 18:51:34 -0500
Subject: [BoatAnchors] Smart People: Drive this Crystal Oscillator
Message-ID: <B64383050EA644F98CE58EA7BF8D1596@DaddyPC>

Need you people smarter than me again.

This is a crystal oscillator stage using a VT-25 (45 Special).

<http://home.netcom.com/~arc5/BC-223/223osc.JPG>

I need a circuit which uses a programmable clock oscillator
as a signal source to drive this stage to full output.
Here is the spec sheet for the oscillator:

<http://www.doveonline.com/pdfs/SG8002DB.pdf>

Available power busses:
6 VDC < 2 Amps, 12 VDC < 15 Amps.

I mean this kindly and respectfully:
Don't need "better ideas," digital solutions,
comments on why it won't work, noise, jitter, etc.
The circuit must use this oscillator as sig source.

I know it can be done because just taking the naked
output of the oscillator chip through a 16: 1 voltage
balun will drive it to about half output.

I would greatly appreciate suggestions for a practical
driver that can be built on the bench of an average
doofuss like me. I cannot make printed circuit boards.

TNX ES 73 Dave AB5S

From jgillespie at porchlight.ca Sun Apr 27 13:51:10 2014
From: jgillespie at porchlight.ca (J Gillespie)
Date: Sun, 27 Apr 2014 13:51:10 -0400
Subject: [BoatAnchors] Winding an Antenna Coil primary
Message-ID: <C12FE5DCCDB4905AF755A3B3D56B6F7@xpuser716b2b38>

hello guys

I have a question about rewinding an Antenna Coil primary. Customers radio is a Marconi model 168, it came in with the primary Antenna Coil winding totally burned out, secondary is AOK. The original coil form has been completely burned through, all around the form. I have been able to successfully repair the coil form using JB Quik Weld. Now I'll need to rewind the primary. I am assuming it's a lattice type coil, similar to the coils found in IF transformers... less than 1/8" wide, but fairly tall. I have a homemade cam coil winder that has been used in the past to rewind these types of coils. Problem is... using #35 wire... what's the best way to rewind without the sides collapsing as I wind. Coils wound in the past have been somewhat successful, but not perfect. Should the wire be pre-waxed or pre-shellaced etc. prior to piling on the form so they stay in place and not collapse ? All suggestions are appreciated John

From gumbear at pacbell.net Sun Apr 27 16:48:55 2014
From: gumbear at pacbell.net (Arden Allen)
Date: Sun, 27 Apr 2014 13:48:55 -0700
Subject: [BoatAnchors] Winding an Antenna Coil primary
In-Reply-To: <C12FE5DCCDB4905AF755A3B3D56B6F7@xpuser716b2b38>
References: <C12FE5DCCDB4905AF755A3B3D56B6F7@xpuser716b2b38>
Message-ID: <D41C72FED01343E48CD5E812FEE8C4A9@KB6NAX>

Hey, "J" - I don't know that JB Weld is suitable for RF coils. It may contain metal or a lossy pigment. Best to use only water clear types of epoxy. It's nearly impossible to make a pretty coil without a universal coil winding machine. Melt some beeswax in a tuna fish can on a coffee cup warmer (that stays "on"). Don't precoat the wire, it's messy. Use a small artist's brush to apply wax to fix turns as needed while winding. Or you can dab polystyrene coil dope on similarly if you prefer a lacquered coil. Make coil dope by dissolving **white** styrofoam packing peanuts in acetone.

Arden Allen
KB6NAX

Adopt a shelter or rescue dog
and make a friend for life =:-)

> I have a question about rewinding an Antenna Coil primary. Customers
> radio is a Marconi model 168, it came in with the primary Antenna Coil
> winding totally burned out, secondary is AOK. The original coil form has

> been completely burned through, all around the form. I have been able to
> successfully repair the coil form using JB Quik Weld. Now I'll need to
> rewind the primary.

From wwatson5 at sbcglobal.net Tue Apr 29 11:15:03 2014
From: wwatson5 at sbcglobal.net (William Watson)
Date: Tue, 29 Apr 2014 08:15:03 -0700 (PDT)
Subject: [BoatAnchors] Wanted: Large rack on casters with rear
door---Oklahoma City Area
Message-ID: <1398784503.16644.YahooMailNeo@web181204.mail.ne1.yahoo.com>

I am looking for a used, good condition rack---5 to 6 feet high---on easy rolling
casters, in the OKC area.

I want it for boatanchors.? Any leads or advice appreciated.

?

Joe Watson

W5WBR

From infomet at embarqmail.com Tue Apr 29 12:35:20 2014
From: infomet at embarqmail.com (Wilson)
Date: Tue, 29 Apr 2014 12:35:20 -0400
Subject: [BoatAnchors] Winding an Antenna Coil primary
In-Reply-To: <C12FE5DCCDB4905AF755A3B3D56B6F7@xpuser716b2b38>
References: <C12FE5DCCDB4905AF755A3B3D56B6F7@xpuser716b2b38>
Message-ID: <41EFB6136F0845CEBAB54FFB282ADFA5@WilsonPC>

Why not glue on a couple of washers to make a constrained area for the
winding??

Leave on when done.

WL

-----Original Message-----

From: J Gillespie

Sent: Sunday, April 27, 2014 1:51 PM

To: boatanchors

Subject: [BoatAnchors] Winding an Antenna Coil primary

hello guys

I have a question about rewinding an Antenna Coil primary. Customers
radio is a Marconi model 168, it came in with the primary Antenna Coil
winding totally burned out, secondary is AOK. The original coil form has
been completely burned through, all around the form. I have been able to
successfully repair the coil form using JB Quik Weld. Now I'll need to
rewind the primary. I am assuming it's a lattice type coil, similar to the
coils found in IF transformers... less than 1/8" wide, but fairly tall. I

have a homemade cam coil winder that has been used in the past to rewind these types of coils. Problem is... using #35 wire... what's the best way to rewind without the sides collapsing as I wind. Coils wound in the past have been somewhat successful, but not perfect. Should the wire be pre-waxed or pre-shellaced etc. prior to piling on the form so they stay in place and not collapse ? All suggestions are appreciated John

From jmccarty at alcatel-lucent.com Wed Apr 30 15:41:58 2014
From: jmccarty at alcatel-lucent.com (Mccarty, John J (John))
Date: Wed, 30 Apr 2014 14:41:58 -0500
Subject: [BoatAnchors] GN-44 hand cranked generator questions.
Message-ID: <53615206.9090606@alcatel-lucent.com>

Gentlemen;

I picked up one of these generators "on the cheap" off the evil bay place because it was listed as seized.

Turned out the problem was corrosion and rust had flaked off the inside of the case and components and

filled the space between the armature and pole pieces. Removing that rust allowed the armature, gears and

shaft to turn freely again. Doesn't matter, it all has to get removed to be cleaned of rust and dust. So I took

the works apart (made drawings, notes, baggies with labels for everything) so it can be de-corroded. Actually

TM11-250 has been very helpful along with Mike H's web pages. It wasn't anywhere near as bad as Mike's

TB0/TBX dynamotor. The worse part of the dis-assembly so far was the removal of the flat head slot screws

on the outside of the case that hold everything to the inside to the case. I managed to get them unscrewed

except two which held on the one of the brush assemblies and those screw heads sheared off. Now that the brush

holders are off I can deal with the remaining stubs and free them up. Now that I've moved to the cleaning

phase of this project I have some questions.

The inside of the case was originally painted black, along with the armature and metal parts of the pole pieces.

Once I remove the rust I would like to repaint these parts to stop future corrosion. Is there paint I should stay way from??

Were the external fasteners (flat head screws counter sunk into the case, pan head screws to hold on the brush covers,

fillister head screws hold on top and bottom covers) painted? I could almost see mounting the internal parts using the flat head screws, doing a lot of masking and then spray painting the outside of the case screws and all.

I can't completely remove the main shaft (where the hand cranks plug in) unless I can remove the inner bearing race from the side w/o the gear. Should this race "pull" off like a bearing on a dynamotor or is it part of the shaft??

I have legs and a seat, does anyone have an extra set of cranks for this set? I think there the same for almost all the Army hand cranked generators.

tnx + 73

John n9hrt

From ae4r at cox.net Wed Apr 30 22:27:21 2014
From: ae4r at cox.net (Mike Steussy)
Date: Wed, 30 Apr 2014 22:27:21 -0400
Subject: [BoatAnchors] Super Pro SP-400 question
Message-ID: <5361B109.2020603@cox.net>

Ahoy! A friend asked me what the Hammarlund SP-400's original color and paint style was. I told him I thought the commercially-sold ones were black wrinkle. Is that correct? If not, please advise what I should have said.

TNX es 73, Mike Steussy AE4R